

# ANALYSIS of FINANCIAL STATEMENTS

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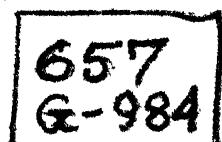
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## CHAPTER I

### The Place of Financial Statements in Modern Business

**Analysis of general value.** Among the subjects important to those connected with the administration of business is that of financial statements, a subject that may be studied from either of two viewpoints—construction or analysis. The construction of financial statements is the work of the accountant, and an ever-increasing number of accounting textbooks are devoted to an exposition of that field. The present volume, however, is concerned with the analysis and interpretation of financial statements, which is the aspect of the subject having more general interest. For every accountant engaged in the construction of a statement, large numbers of persons are interested in the use of that statement—the executives, who need information upon which to base their guidance of the destinies of the business; the bankers, who must have sufficient information to justify the making of loans; credit managers, who require adequate facts as a basis upon which to extend credit; and investors, who demand a sufficient record of financial success to warrant their purchase of the securities of the business. Even the accountant will find it valuable to study the analytical side of financial statements, in order to acquire the viewpoint of the users of his product and to give his work more than the mere technical accuracy required of certified statements.<sup>1</sup> His reports should be so framed as to possess

<sup>1</sup> As the result of suggestions, the Committee on Terminology of the American Institute of Accountants added the interpretative function to its original definition of accounting: "Accounting is the art of recording, classifying and summarizing in a significant manner and in terms of money, transactions and events which are, in part at least, of a financial character, *and interpreting the results thereof.*" Italics (ours) represent the addition made in Research Bulletin No. 9 (1941) to the earlier statement in No. 7 (1940). Probably most accountants would regard their work as limited to the preparation of the summary financial

a maximum of usefulness for interpreting the financial situation that they are intended to picture.

Although emphasis is thus placed upon the wider utility of the analytical side of this topic, no disparagement of the study of the constructive side is intended. The student or businessman who by actual practice has learned by what steps and upon what principles statements are constructed is to that extent better qualified to analyze the resulting product. What is needed, however, is more particular attention to the ultimate end that most persons wish to attain by such study. The question that confronts the majority of people who come in contact with financial statements is, "What are the significance and meaning of the figures presented?"

Before we discuss the subject, it may be well to point out certain factors that have operated to bring about an increased use of financial statements. The most important are (1) large-scale production; (2) governmental regulation, particularly of public service corporations; (3) income tax legislation; and (4) the regulation of security issues and the security markets by the Federal government under the Securities Act of 1933 and the Securities Exchange Act of 1934.<sup>2</sup> The spread of common stock ownership has made the publication of adequate statements essential. An increasing number of economists, labor leaders, and legislators recognize the value of and use financial statement information in their work.

**Large-scale production.** Large-scale production is one of the outstanding characteristics of the present industrial era. A primary motive for greater size has been the economy of large-scale operations in various fields. Savings have resulted from the use of labor-saving machines too expensive and too huge in their productive capacity to fit into the small plant, from large purchases of raw materials by trained buyers, from the division and specialization of labor, as well as from more skillful methods of marketing. But although on the one hand this trend toward large-scale operation has been effecting economies, on the other hand it has been making necessary a new

statement in a form suitable for interpretation by the various nonaccountant users. That their training now lays more emphasis on interpretation is a recognition of need for a knowledge of the end use to insure statements in a form suitable for such users.

<sup>2</sup> For another view, see P. F. Brundage, "Milestones on the Path of Accounting," *Harvard Business Review*, July 1951, pp. 71-81.

## Preface to Fourth Edition

The purpose of this book is to explain how financial statements are read and understood. The needs of the banker, the credit man, the investor, and the business executive, rather than those of the accountant who constructs these statements, are given first place. Nevertheless the accountant has become increasingly impressed with the need to know how his work is used and interpreted by the various kinds of statement users. Study along these lines gives him a point of view that enables him to turn out a product—the financial statement—that will have maximum utility. Even professional men need to be good businessmen and to understand their market.

When the first edition of this book was written, the user was taken for granted, and the literature on analysis and interpretation consisted chiefly of scattered articles and pamphlets, although accounting already had a well-developed complement of textbooks. Today the situation has changed somewhat. Some of the chief debates about proper accounting form arise from the varying reaction of different classes of statement readers. There are books available on statement analysis, but for the most part the businessman and the business student are still invited to study bookkeeping and accounting to appreciate how to use statements. As a result, many learn much about construction, but only incidentally about interpretation. Although a grounding in accounting methods is of first-rate utility in business, it would still seem that accounting education has been more adequate for the future professional accountant than for the more numerous class that will read the financial statements for the information they may convey.

This bias is sometimes reflected in the criticism that books such as this offer examples of poor and imperfect statements. A book on statement analysis must enable the reader to interpret good and poor statements in all the variety in which they are found in practice.

## PREFACE TO FOURTH EDITION

Past, as well as current, practice must be understood if the analyst is to go back into a corporation's previous financial record.

Much progress has been made, especially since World War II, in making statements more intelligible to the layman by simpler terminology and changes in form. Nevertheless only study and acquired familiarity with statements can develop an adequate understanding and appreciation of what they can tell the alert reader. The tremendous improvement in the quality and quantity of information offered since the first edition of this book appeared is hard to realize. Less of the Sherlock Holmes is needed today. Yet the potentialities of useful information to be had can be fully realized only as study and experience develop the eye for the significant relations discussed here. These relations disclose profitability, solvency, and relative performance within the industry.

A book such as this should be only the starting point for a fruitful and interesting excursion into the realm of financial statements. Such an approach should prevent a blind memorizing of textual matter to the neglect of meaning and mode of application. Dry figures should become a vivid story of the financial adventures of a business enterprise.

In spite of the extensive rewriting of the material for this edition to bring it abreast of current developments, the essential structure of the book remains unchanged. Part I is devoted to the general principles of analysis. Basic accounting principles are reviewed, but only as they are important for interpretation. Illustrations are used to give concreteness for the beginner and to provide precedents which the advanced reader may pursue for further detail. In this section, the problems of smaller business units (so important to the banker and the mercantile credit man), as well as those of the larger corporation, are considered. The examples and point of view are for the most part those of merchandising and manufacturing business.

The second part of the book treats particular types of statements under three divisions: the public service industries, industrial, and financial corporations. For the sake of convenience, the holding company is placed in this third category although some instructors prefer to place it at the beginning of this section. No attempt has been made to include all types of business. Those included are among the most important and should be sufficient to illustrate the method of attack. For example, air transport companies have much in common

## PREFACE TO FOURTH EDITION

with "industrials" by virtue of the competitive aspects of their very fluctuating business; in traffic analysis, regulation, and the service nature of their business they have much in common with the railroads. Savings and loan associations and mutual savings banks occupy places of first-rate financial importance but their statements will not appear strange to the student who has covered other financial businesses covered here, especially the commercial bank, and who appreciates the fundamental financial relationships. The general emphasis in this second section is on the affairs of the large corporation and the long-term investor and management points of view.

The author should like to express his appreciation to all of the credit men and bankers, instructors and students who have made criticisms and suggestions for this edition. He would like each to feel that he has made a contribution to the stream of education which it is hoped this book will feed. His debt is especially great to the late Dr. Charles W. Gerstenberg, who first suggested the book and generously contributed suggestions from his very considerable experience. He is also indebted to his friend and colleague, the late Professor C. Lloyd Sweeting, for his aid and inspiration with the initial edition. Professor Thomas A. Budd, vice dean of the Wharton School of Finance and Commerce, University of Pennsylvania, gave valuable editorial help in the subsequent revised edition.

Mr. Harry L. Kunze has assumed responsibility for the arduous job of preparing the problem material, which is based upon his teaching experience at the University of Wisconsin in Milwaukee. Special acknowledgment is made of the large contribution of ideas for both text and problems from Professor D. W. Curry, professor of accounting at Southern Methodist University.

HARRY G. GUTHMANN



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**Part I**

**GENERAL TECHNIQUE OF ANALYSIS**



type of administration—one that is able to understand and control a large organization through the instrumentality of accounting and statistical reports. The day has largely passed when the management could enjoy a face-to-face relationship with the men and the operations of a business or an industry.

The relationship has become impersonal not only within the individual organization but between businesses as well. The increased facilities for transportation and communication have widened markets immensely. Although individual owners and partners are more numerous than ever, business operations in many fields are largely conducted by corporations. The complex co-operative efforts of the latter require summarizing. Some means must be provided to convey essential financial results of the activities of the entire organization.

No adequate idea of the corporation's properties can be had from inspection, but the elements of strength and weakness may be studied from a financial blueprint. Such a statement of condition is found in the balance sheet. A summary that will show the profitability of the multitude of changes constantly taking place as the result of operations, is also compiled. Such an account for a period of time is known as a profit and loss, or income, statement. Although the income statement might seem of interest only to the owners of a business, its significance is broader. If the capital of a business is drained by losses, the ability to pay creditors may be seriously weakened. Shrinking capital may so handicap the business as to bring about its death with serious consequences for labor and the community as well as for the suppliers of capital and credit.

Ability to interpret the abstract figures compiled by the accountant makes possible executive control of large-scale industry and consequent social economies. Today the ability to analyze financial reports is essential in bridging the gap in personal relationships created by the size of our business units.

**Regulation of public utilities.** A second factor that has tended to develop a better quality of financial statement, and so to increase its study, is governmental regulation. When public service corporations on a large scale first came into existence, the government adopted the policy of granting a multitude of charters. In certain instances, parallel railroads were chartered and constructed. At that time, competition was considered as the only force needed to regulate commerce. Inevitably, however, there developed a tendency

toward unification as it became apparent that public service corporations rendered the most economical service when operated as monopolies. In the absence of the restraining influence of competition, regulation by governmental commissions became necessary for the proper protection of the public, particularly against unreasonable charges. The first and essential step was standardization of accounting procedure, in order to obtain correct and adequate data for the construction of financial statements.

For railroads engaged in interstate commerce, the Interstate Commerce Commission has prescribed what accounts shall be kept and their content. In most states public service commissions have put into effect standardized account classifications for the different kinds of utilities. Financial reports published under the rules of these various regulatory bodies have become invaluable to the investor and the economist.

**Income tax accounting.** A third influence that has made the use of accounting records more common and so made more available the material necessary for financial statements is the operation of the income tax law. This law became constitutional for the Federal government on March 1, 1913. A number of the states have also adopted the tax as a part of their fiscal programs. One of the most striking things brought out in the administration of the law was the number of businessmen either entirely without information or in possession of very inadequate figures in regard to the condition and operations of their businesses. Consequently, it has been necessary for the tax authorities to insist upon the keeping of suitable accounting records. The tax law has had a powerful influence upon accounting practice. As will be seen later, however, accounts kept for tax purposes may not be adequate for all purposes.

**Federal security regulation.** The Senatorial investigations of various financial practices following the crash of 1929 brought home very clearly to the public the paucity of published information in many of the cases questioned. Huge sums had been raised by promoters and investment bankers on the basis of such slender information that, in effect, the investing public was participating in blind pools. This situation was met in the Securities Act of 1933, which compels a full disclosure of pertinent facts in the case of security flotations involving interstate commerce or the use of the mails. Again, corporate administrations, sometimes owning but small

amounts of securities in the concerns they managed, pursued on occasion a policy of concealment that showed little appreciation of the principle of trusteeship that should be effective in such cases. The latter situation was dealt with in the Securities Exchange Act of 1934, which, through the powers vested in the Securities and Exchange Commission, regulates the organized stock exchanges and requires corporations with securities listed on such exchanges to supply suitable financial statements. This regulation has resulted in more adequate reports from the corporations whose securities are listed or have been distributed to the public since 1933. The differences among the various kinds of business make uniform reporting, such as is usual for a given kind of public service corporation, difficult to prescribe. Occasionally, the objection is raised that very full reports may give competitors undue advantage, especially if the competitors are not publicly financed and so not obliged to make similar disclosures.

The Securities and Exchange Commission developed and made mandatory financial reporting which had been initiated by the New York Stock Exchange. Although Exchange officials created high standards for companies seeking to list their securities, they lacked the power of a governmental regulatory body in applying new rules of a stricter sort to old companies. Much of their work was persuasive rather than mandatory in nature, so that many reports of well-known companies were quite inadequate.<sup>3</sup> Full credit is due, however, to those corporate officials who recognized their position of stewardship and rendered full and detailed reports without outside compulsion. Even today, the reports of regulated corporations vary greatly in their informative quality, especially in background material that is difficult to require by regulation, yet is invaluable for interpretation.

**Analysis for executives.** Although each of the four above-mentioned factors has tended to increase the use of statements, the first—the growth in size of the business unit—is the leading influence. Within the business it has forced the executive to feel the need for suitable accounting control; outside the business the banker, the merchant creditor, and the investor have come to rely largely upon the financial statements in making their decisions. \*

<sup>3</sup> W. Z. Ripley cited cases of lack of adequate publicity in *Main Street and Wall Street* (Boston: Little, Brown and Co., 1927) in Chapters VI and VII.

The first and most important function of financial statements is, of course, to serve those who control and direct the business, to the end of securing profits and maintaining a sound financial condition. Management needs a considerable amount of accounting information to supplement the two summarizing financial statements. Figures on costs of various products and on the operations of various departments and geographical divisions, as well as more frequent and detailed data, are essential. In the task of control and direction, many problems are involved, and the assistance of reliable information is invaluable, although the exact nature of the assistance obtainable from the utilization of financial statements can be understood only after the principles of analysis have been developed and the features that merit attention pointed out. Management must watch the over-all picture as well as the details. Questions as to how efficiently the capital of the business is being utilized, how well credit standards are being observed, and whether the financial condition is improving may be answered from the statements.

Using analogy, we may say that the financial statements will serve the business executive as gauges and charts serve the engineer. Although nobody will assert that the ability to read gauges and similar instruments makes an engineer, anybody will admit that one should use as many devices as possible to register automatically the important things, so that his decisions may be made more intelligently.

Although appreciating the place and importance of statement reading in administration in the field of business, many businessmen lack ability or training, or both, in this direction, even though much has been accomplished by widespread education in accounting in recent years. The accounting profession has helped to improve understanding not only through its regular day-to-day work, but also through its professional organization. The American Institute of Accounting, especially through its Committee on Accounting Procedure, has worked steadily at improving statement terminology and standards of procedure. The American Accounting Association, representing the university teachers of the subject, has contributed valuable official pronouncements as well as encouraged individual contributions of members to the literature of the field.

**Analysis in banking.** After the executive, there is probably no one quite so much interested in the details of the finances of an enterprise as the banker. The banker stands in a particularly confiden-

tial relation to his customer. Because of the very narrow margin of profit in banking, caution is so necessary that it has become a proverbial characteristic of the banker. In general, the commercial banker discounts the notes of his customer for a short period, say, thirty to ninety days. He wishes to be assured, not merely that these notes will be paid ultimately, but that they will be paid when they come due.

The policy of the Federal Reserve banks favors short-term paper. The logic of this policy rests upon the demand liability nature of commercial bank deposits, which supply most of the funds for its lending. Although since 1935 the Federal Reserve banks have been permitted to make advances upon any bank assets judged acceptable under the regulations of the Board of Governors of the system, rediscounts or loans upon paper of not more than ninety days' maturity at the time of rediscount are favored.\* (As a practical matter, the rise of Government obligations to a leading position among bank assets after the early 1930's, resulted in most Federal Reserve credits taking the form of "advances" secured by such short-term issues. Traditional rediscounts sank to a minor role.) In order to determine eligibility, it is customary to require financial statements of borrowers.

Although it is true that the banker seeks liquidity, he may feel it necessary to use leniency in periods of stress. His debtor occupies the position of a client rather than that of an ordinary customer. This means that the banker's analysis, in the first instance, should be thorough. He should extend credit only where the situation is fundamentally sound, even though the advance is theoretically only temporary; and then, if it becomes necessary to carry his customer along, he can do so with confidence.

Another development that has increased the need for thorough banker analysis is the rise since 1935 of the term loan. This credit, unlike the traditional short-term commercial banking paper, runs for an extended period, say three to five years. The principal is repaid by regular amortization that is designed to retire the whole indebtedness during the term of the loan. Such a loan, requiring a longer period of repayment, presumably is a greater burden in relation to

\* Loans under Sections 13 and 13a of the Federal Reserve Act. An exception is made for agricultural paper, which may be for nine months. Regulation A as revised October 1, 1937.

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the borrower's means than the usual commercial paper and so entails a greater credit risk. Moreover, the longer the credit period, the greater the opportunity for adverse developments that may cause losses.

The banker will usually secure his statement from the borrower. In an effort to check the information from an independent source, a credit report may be drawn from the general mercantile agency, Dun & Bradstreet, Inc. Usually, the chief value of these special reports will lie in the other supplementary information they furnish relative to the business history, the payment record, and the standing of the borrower. A most valuable resource of the banker in making his analysis lies in the personal interview, in which it is possible to find out the borrower's explanation of any extraordinary items or apparent abnormalities.

The personal interview must be regarded, however, as a supplement to, and not a substitute for, financial statements. In the past bankers were often inclined to underrate the utility of the statements and to rely too greatly upon the impressions created in the personal interview. This mistake was most natural when the art of statement interpretation was young and often unfamiliar, when statements were poorly prepared, and when giving them was often resisted by prospective borrowers of wort<sup>1</sup>. This former attitude is reflected in the report that Adolph Ochs, the builder of the great *New York Times*, when in 1904 he had to borrow \$2,500,000 to erect the Times Tower in what is now Times Square, proudly refused to give banker creditors a detailed account of his finances, stating that such a statement was appropriate on only two occasions: when a man was going into bankruptcy and when his administrators appraised his estate.<sup>5</sup>

The experience of a small bank that had extended credit to a local manufacturer for a considerable period without obtaining any adequate statements is illustrative of what may happen when too much reliance is placed upon personal impressions. During the period in which credit had been granted, the indebtedness had slowly increased; and when a statement of condition was finally demanded and analyzed, insolvency was only too apparent. The bank had been financing a growing deficit. Yet, in this instance there should have been ideal credit information, for the bank was serving a small com-

<sup>5</sup> Meyer Berger, *The Story of the New York Times, 1851-1951* (New York: Simon and Schuster, 1951), page 152.

munity and had built up intimate relations with its customers. It is evident that this very intimacy had made the banker careless in his demand for, and scrutiny of, financial statements.

This case is not to be regarded as characteristic of present-day banking business. Stricter bank examinations have reinforced the lesson of the many bank failures during the early 1930's. Save for small personal loans, which require a special form of investigation, a bank invariably demands either a financial statement or specific collateral security. The specialized credit department of the modern American bank, with its complete information files, is but a logical development of changed conditions in two important respects. In the first place, the growth of keen competition makes it essential for a bank to know more precisely the condition of a customer so that it may grant him as large an amount of credit as is merited in order to avoid losing his patronage; and, second, the bank's customers are spread over a larger area and have increased in numbers to such an extent that their relations are more impersonal and statements constitute the only means of securing a complete picture of the financial situation.

**Analysis in mercantile credit.** Another field where the use of the financial statement is important is that of mercantile credit-granting; that is, the granting of credit by one merchant to another. The margin of gross profit in this sphere has been wider than in banking, and there has existed a feeling on the part of some businessmen that the work of credit-granting was incidental to the main work of buying and selling. This attitude has made difficult the work of those other credit-granters who have appreciated the importance of care in credit extension if profits are to be realized and who have sought co-operation among creditors in exacting adequate information from their debtors.

The usual object of granting a credit term is to permit the customer a period in which he may realize on his merchandise. This term may vary from one to six months, depending upon the kind of business; and in that respect it is similar to the short credit term of the commercial bank. The attitude of the merchant, however, is essentially different from that of the banker. The former is seeking an outlet for his specific goods and is willing to grant credit to open that outlet and thereby obtain a profit; the latter lends for the sole object of obtaining interest on his funds. This greater inducement

for the merchant to extend credit is the chief reason for his lower standard of credit. In a practical sense, though not in a legal sense, manufacturers and wholesalers make their customers partners in the profit-making job of distributing goods to the consumer. Such "partnership" is seen in the growing aid on accounting, buying, and selling methods given to retailers by their trade creditors in an effort to prevent the extinction of the former by the competition of chain stores.

With the increase in competition has come a tendency for the margin of profit to decline, which, in turn, has gradually increased the need for improving the credit risk. In spite of this fact, much credit is still based on references. If a house has a record for prompt payment, it is eligible for further credit. The argument seems to run, "If he has paid, he will continue to pay." That this argument perhaps holds true is a tribute to the worth of the debtor rather than to the soundness of the reasoning. A concern with a good record may be financially weak, and a slow-paying house with a poor record may be essentially sound. The true state of affairs would, in any case, be revealed by a properly prepared financial statement, because such a statement would indicate the probable reason for past promptness or slowness and suggest what might reasonably be expected in the future.

The value of statements has been recognized by the National Association of Credit Men almost since its organization in 1896. It has encouraged the wider use of this type of information by adopting a uniform statement blank which it supplies at a nominal cost. It may be noted in passing that this action in adopting a uniform statement blank in 1898 preceded similar action of the American Bankers' Association by a year. In its educational work it has urged the advisability of securing these statement blanks and having them properly filled in and signed by the credit applicant.

**False statement laws.** Written statements so obtained are likely to be more accurate than information obtained verbally. The mere fact of writing the figures down in black and white makes for caution. In addition to this, the law protects the holder of a signed statement.<sup>6</sup> The protection afforded is threefold.

<sup>6</sup> For a full treatment of the remedies for defrauded creditors, see Arthur E. Fixel, *False Financial Statements* (Albany, N. Y.: Matthew Bender & Co., Inc., 2nd ed., 1934).

1. In practically every state there is some form of statute punishing those who obtain property by means of false representations. Such statutes are usually found in connection with the law relating to larceny. In this form, the law has been found unsatisfactory because of the legal difficulties in the way of completing all the required evidence. For example, it is usually necessary to prove the delivery of the property to the defendant. And inasmuch as goods in transportation pass from hand to hand and finally to some employee of the customer, it is frequently a task of unusual difficulty to supply this one point of evidence, even though it is practically certain that the goods have been received and used by the customer.

2. For the above reason, legislation has been sought in order to make the giving of a false statement for the purpose of obtaining credit an offense in itself. The National Association of Credit Men has been instrumental in securing a special false statement law. The only evidence required under this law is that necessary to prove (a) that the defendant made a false statement; (b) that he intended that the statement should be relied on; and (c) that he gave it for the purpose of securing credit. Under such an act the question is not raised as to whether there was a "fraudulent intent," but only as to whether the debtor gave out a false statement for credit purposes. The spread of such a law to the majority of the important commercial states is indicative of the wide use of statements as a basis for mercantile credit, and of the feeling of need for assurance as to their reliability.<sup>7</sup>

3. Under the Federal law punishing those who use the mails for fraudulent purposes, a person sending a false statement in writing makes himself liable to even more severe punishment than is provided under state laws.<sup>8</sup> The law is very similar in its evidence requirements to the false statement law used in the states as described under heading 2. The vital difference is the necessity of proving, when the case is prosecuted under the Federal law, that the statement in question was sent through the mails. It is to insure against the loss of the postmarked wrapper that the property statement

<sup>7</sup> *Credit Manual of Commercial Laws—1952* (New York: National Association of Credit Men, 1951), pp. 352-353, 355.

<sup>8</sup> *United States Code, 1946 edition, as amended to 1951 by Supplement IV, Title 18, Part I, Chapter 8, Section 338* (Washington, D. C.: U. S. Government Printing Office, 1951).

blank of the National Association of Credit Men, referred to above, is printed on a form that, when folded, makes its own mailing envelope.

**Analysis for investors.** Turning from the banker and mercantile creditor to the investor, we find a somewhat different problem. Whether buying an interest in a firm or purchasing the securities of a corporation, the investor's interest in the enterprise will be continued for a number of years instead of for a few months. If he is buying an interest in a partnership, he is concerned with the net value of properties, the amount of earnings, and the financial strength of the business and the partners. If he is a prospective stockholder, his problems are practically the same, except that in a corporation there is likely to be a more complicated financial structure and his foothold may be more precarious owing to the greater number of obligations taking precedence over his interest as stockholder. The bondholder has a much easier problem of analysis. Under normal conditions, he is protected by a margin of property values in excess of his claim and by a surplus of income over the requirements for his interest. His problem is to assure himself that the margin of safety is sufficient to meet the requirements of his financial position and temperament.

Investors as a class need to know, first, that the whole financial structure is strong—not merely that the concern will be able to meet current obligations; and, second, that there is sufficient evidence in the history of its earnings to warrant a belief in future growth, or at least reasonable stability. One of the advantages arising from analytical ability is that it opens up a wider range of investment possibilities and a consequent increase in income without a corresponding loss of safety. To the person appreciative of the power of interest accumulations, increased return, small though it may appear to the uninitiated, is no inconsiderable attraction and suggests the value of a more thorough knowledge of how to study a financial report. Thus, so small a sum as \$10 per month when saved regularly over a period of forty years would equal \$4,800; but if 3 per cent interest compounded half-yearly were added, it would amount to \$9,162. If, however, the rate earned could be raised to 4 per cent, the accumulation would reach \$11,626; at 5 per cent, it would be \$14,902; and at 6 per cent, \$19,281.

The search for higher return often means the assumption of increased risks. If losses ensue, they counterbalance the higher return. The problem of the investor is to avoid risks which are likely to consume all of the extra income, or "premium for risk." This end may be achieved by avoiding investment fashions or by selecting less well-known and less marketable commitments. Only by the most conscientious analysis of the record and study of the outlook can extra net return be realized, except as it occasionally arises from luck.

The investor seeking statements will find them supplied for practically all important corporations in *Moody's Manual of Investments*, which supplies information in separate volumes on (1) railroads, (2) public utilities, (3) industrials, (4) governments and municipals, and (5) banks, finance, and insurance. Suitably indexed supplements of current information are published between the annual volumes. The *Corporation Records* of Standard & Poor's Corporation contain statements and other financial information in loose-leaf form. *The Commercial and Financial Chronicle*, *Barron's*, *The New York Times*, and the *Wall Street Journal* are widely used for current financial information. Most corporations issue to their stockholders annual financial reports, which are sometimes condensed when reported by the agencies just mentioned. On the other hand, the investment services sometimes supply details reported to the Securities and Exchange Commission that are not found in the annual stockholders' report. The latter is not always in sufficient detail to be wholly satisfactory.

The influence of the investor is doubtless one of the strongest forces working for financial publicity. Even before the rise of Federal regulation, one of the requirements of the New York Stock Exchange and of the Midwest Stock Exchange was that the corporation must agree to file its balance sheet and annual statement of operations before its securities could be listed for trading on these exchanges. The movement for publicity is made effective by the competition for the investor's capital and by the desire for lower interest rates. Public confidence is a valuable thing to the financier.

Corporations whose financial statements are issued under the requirements of the Securities and Exchange Commission or other regulatory bodies often report more fully than they otherwise would.

**Value of statement publicity.** Thus far the utility of our subject to the executive, the banker, the trade creditor, and the investor has

been briefly outlined. Important as these uses may be and broad as these interests are, particularly in the case of the last class, it may not be too far-fetched to suggest that the public, as such, has a real interest in learning "how to read figures." This statement may not apply to the general public, but it certainly applies to that part of the public that leads our thinking in economic matters. The professional economist, the journalist, and the legislator, when dealing with business, all stand in need of a much clearer understanding of this field, toward which so much of their attention is turned, than is usually possessed.

Big business, because of the power it wields, offers a convenient target for attack in times of unrest, regardless of the fairness of the censure. When a half-dozen business units supply practically the whole demand for an article throughout the United States, their very size gives them economic power that makes their policies a matter of considerable social importance. If mystery surrounds their operations, there is bound to be misrepresentation; the only avenue of escape from a serious hostility is publicity. Business is generally charged with being extortionate by those who are little acquainted with its ways rather than by those who are familiar with them, for the latter are acquainted with its losses as well as its gains.

A general feeling of hostility toward big business dates back to the early period of railroad history when the railroads were regarded as financial footballs by the warring "speculators" of that time. Public welfare was disregarded, and a "public-be-damned" attitude was current. Subsequent regimes have had to bear the stigma then acquired, with the result that legislation has been harassing and repressive rather than helpful and constructive. In view of the commercial importance of the railroad's services and of large-scale business generally, this attitude is unfortunate. However, it can only be regarded as the logical outcome of the past. When the public is disregarded and uninformed, it is quite likely to step in and enforce its rights with a harsh, if not an unjust, hand.

Certain companies, notably in the meat packing, dairy products, and chain grocery store fields, have adopted the plan of presenting in popular advertising form the relatively small amount of their profit compared with their total sales. Others have also shown how the sales dollar is divided among the various costs. The shares that go to wages and to capital are of particular interest. Often a full

statement of the facts is valuable in refuting loose statements that exaggerate the extent of profits and so make for social conflict.

The logic of a policy of frankness is well stated in the following advertisement of the General Motors Corporation:

In recent years there has developed an increasing tendency on the part of forward-looking corporations to take their stockholders and the public more fully into their confidence.

With few exceptions, hardly any business of the first magnitude is any longer a private enterprise. Most of the major industries are publicly owned, and their operating officials recognize both the obligation of frankness to the owners and the benefit which can accrue from widespread public support based on complete public understanding.

General Motors has been privileged to take an advanced stand in promoting this new era in the relationship between so-called "Big Business" and the people.

The Corporation publishes not only annual and quarterly statements of earnings. It also publishes each month exactly how many cars have been sold to the dealers and delivered by them to the public. By statements to stockholders, and by frequent releases to the financial sections of the daily newspapers, timely and accurate information is given regarding its operations both in this country and abroad, its investments in related industries, and the important developments in progress and plans.

General Motors believes that this policy of telling the facts has done much to strengthen the confidence of the American people in their important industries, and that this increased confidence is well reflected in the generally increased number of owners of common stocks.

The stockholders of General Motors, who were less than 2,000 in 1917, increased to more than 71,000 at the beginning of 1929, and are more than 240,000 at the present time. [By 1951, the number was over 478,000.]

Financial statements must meet varying needs, some of which differ, for example, as between that of the commercial bank making a short-term loan and that of an investor for the long term, or between the requirements of the tax collector and those of the management anxious to give its best judgment of condition and operations. Management is resorting to simplified reports to inform employers and improve small-stockholder relations. But these presentations may be inadequate for even the moderately skillful statement reader to say nothing of the professional staff of the financial institution or the investment advisor. Details that dull the interest of the average reader may be essential to inform the professional. The needs of the latter should be met even at the risk of boring the average reader.

for a few pages. Successful financing depends upon the good will of the skillful minority as well as the general public.

The accountant's work must try to reconcile the needs of the various users so as to achieve the greatest possible usefulness. In trying to adopt procedures and rules that will make for uniformity and comparability as between companies and periods of time, some needs may go unsatisfied. Herein lies the desirability for more skillful statement reading and for a management policy that supplements the statements so that they will aid the corporation's credit, create good will, and yet serve as an honest accounting of stewardship to the various elements of the economic community.

## CHAPTER II

### The Construction of the Balance Sheet

**The two statements.** There are two financial statements—the balance sheet and the profit and loss statement. Before these statements can be appreciated and interpreted, it is necessary to understand the general principles governing their construction; consequently, this and the next chapter review some of the basic elements of accounting. Such a review will only cover the basic principles necessary for analysis, which should be familiar to the student of elementary accounting, and will ignore the procedures and record-keeping involved.<sup>1</sup> Our starting point is a description of the general way in which each of the statements is put together and their interrelation. After this survey the two statements are more thoroughly explained, and in succeeding chapters the methods of interpretation are given.

The purpose of the balance sheet is to show the financial condition of the business on a certain date, generally at the time when the books are balanced and closed at the end of the calendar year or at the end of a fiscal year ending on some date other than December 31. The earnings statement summarizes the changes that have taken place since the date of the preceding balance sheet and that have affected the owner's share in the business by either loss or gain. The balance sheets might be described as financial cross sections taken at certain intervals and the earnings statements as condensed history of the growth or decay between the cross sections.

**Titles.** The balance sheet, which is the more used of the two statements in some fields, such as short term credit granting by banks and trade creditors, is given various titles, partly because of a lack

<sup>1</sup> For the reader who has not had such a course too recently, the study of a suitable accounting textbook will be a valuable supplement to these two chapters; e.g., H. A. Finney and H. E. Miller, *Principles of Accounting, Introductory*, especially Chapters 1-4 (New York: Prentice-Hall, Inc., 4<sup>th</sup> ed., 1953).

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of uniformity in accounting practice and partly because of different conditions under which the information is obtained. The more usual titles are:

1. Balance Sheet, or General Balance Sheet.
2. Statement of Financial Condition.
3. Statement of Financial Position.
4. Statement of Assets and Liabilities.
5. Statement of Resources and Liabilities.
6. Statement of Assets, Liabilities, and Capital.
7. Statement of Worth.
8. Financial Statement.

The title, "Balance Sheet," is used most frequently: and when it is used, the implication is that the figures have been taken from the balances shown on the books of account. The same is generally true for balance sheets published under the other titles, at least for larger businesses or wherever the statement has been prepared by an accountant. Small concerns with poorly kept or inadequate records may offer figures that are at least partly estimated. In such cases the title "Financial Statement" is probably used most often. That term is so general that it is better not to use it when referring specifically to a balance sheet. It is better applied to a whole report consisting of balance sheet, earnings statement, and any other pertinent financial data.

The title "Statement of Affairs" is used only when an enterprise has reached the insolvent stage. Then assets are shown at values that it is expected may be realized in *liquidation* with the amounts of the various claims against those values. In contrast, the accounts of an ordinary business are said to reflect asset values and claims on a *going-concern basis*.

A not uncommon practice in connection with new financing, merger, and recapitalization or reorganization is the preparation of a hypothetical balance sheet that adjusts the regular balance sheet to reflect the changes which are contemplated, such as an increase in cash and in the outstanding securities. Such a statement, "after giving effect to" the proposed changes, is called a *pro forma* balance sheet. Occasionally, this statement is used to reflect the past on an "as if" basis. At the end of 1950, Radio Keith-Orpheum Corporation



Rs 13.50

reorganized into two corporations separating its motion-picture-producing and theater properties. Profit and loss statements were prepared for the operations of that year on a *pro forma* basis as if the business had been operated by two separate companies.

**Form.** The customary form of balance sheet, which accountants call the "account" form, shows the properties and their values on the left-hand side of the sheet and the claims or interests or equities resting in this property ranged against them on the right-hand side. The English practice reverses this order.

The foregoing reasoning might properly be criticized because legally the creditors have claims not against property but against persons: those who own the business in the case of the sole proprietorship and the general partnership; the artificial person, the corporation, in the case of the incorporated business. An answer might be made that these persons would have little ability to pay without the assets. Nevertheless, the analyst will find it useful to remember that the creditors are best protected not by particular assets but by a going concern. This concern is directed by human beings who utilize the assets to generate through operations a cash flow that pays debts as long as the business is a solvent entity.

A simple balance sheet might read as follows:

ORANGE GROCERY STORE  
J. R. P. WINSON, PROPRIETOR  
BALANCE SHEET, DECEMBER 31, 1951

<i>Assets</i>	<i>Liabilities and Capital</i>	
Cash . . . . .	\$ 1,200	Accounts Payable . . . . .
Accounts Receivable . . . . .	2,500	Notes Payable . . . . .
Merchandise . . . . .	8,500	Mortgage Payable . . . . .
Fixtures . . . . .	500	Net Worth . . . . .
Land and Building . . . . .	15,000	15,700
	<u>\$27,700</u>	<u>\$27,700</u>

For the reader accustomed to using statements, this form, which places the liabilities directly opposite the assets from which they must be paid, is especially useful. Later we shall see (Chapter VIII) how it may be desirable to place the liabilities and owners' equity below the assets in order to have the figures for each year in a single column. That arrangement permits a readier comparison of the changes in the various balance sheet items for successive years.

**Assets.** The assets are all the properties that belong to the business. If the business is conducted by an individual or a partnership, the balance sheet does not necessarily include all the property on which the creditors may levy for the payment of their claims. Everything the proprietors own, whether used in the conduct of the business or not, with the exception of certain articles that are exempt by the laws of the various states, is subject to creditors' claims.<sup>2</sup> This possibility of going outside the business for the settlement of a claim is important in judging the credit rating of unincorporated businesses, such as that of the typical independent retailer. The reports of the general mercantile agency, such as Dun & Bradstreet, Inc., aim to include any outside property and debts, not only for their bearing on the real worth of the debtor but as indications of the outside financial activities of the owners.

One of the most vital points in understanding the construction of this side of the balance sheet is a knowledge of how the asset values are arrived at. In defining a balance sheet, it was stated that its object was to show the financial condition on a certain date; yet the asset values, generally speaking, show the cost at which they were acquired. This variation from what would appear to be the common-sense method, that of using the current values at the date of the balance sheet, may be best explained by a brief statement and explanation of the principles that govern the standard accounting practice in asset valuation.

1. *Rule of valuation at cost.* In general, the value shown is the cost of the property at the time acquired. This amount, it is assumed, was determined by market conditions and consequently is not of a theoretical or arbitrary nature. The rule has certain virtues. It prevents arbitrary manipulation by an interested management; it has become the most common basis for determining invested capital for rate-making purposes in the case of public service corporations subject to governmental regulation; and it makes possible more accurate determination of profit or loss when the asset is finally disposed

<sup>2</sup> Exemptions of homesteads, personal property, and wages that are free from the claims of creditors under the laws of the several states and the rights of married women that are relevant to credit analysis may be found in up-to-date form in the *Credit Manual of Commercial Laws* published annually by the National Association of Credit Men (New York). Other state laws are summarized on mechanics' and landlords' lines.

of. Finally, the cost<sup>2</sup> of obtaining disinterested and useful asset appraisals at annual intervals would often be high relative both to the profits and to the usefulness of the information obtained.

The relation of the problem of accounting valuation to earnings will be more apparent when we come to study the earnings statement. The possibility of supplementing the balance sheet figures when such information has sufficient utility for the analyst will also be considered.

✓2. *Chief exceptions.* The most important exception to the rule of valuation at cost is found in the case of those goods that are the stock in trade of the business and are being constantly bought and sold. These are the items that usually appear as either "Merchandise" or "Inventories." Although cost may be used for these items, the use of "cost or market price, whichever is the lower of the two" seems to be the most common rule. This rule, like some other accounting "principles," is one of practical expediency rather than logical consistency.<sup>3</sup> The consistent use of market value when it is more than cost would increase the inventory value and so the owners' net worth. But to show an "unrealized profit" is to violate one of the basic accounting rules. No such objection is made to showing an "unrealized loss" when the market value of inventory is below cost. The willingness to treat the two situations differently is partly conservatism, which is virtually an accounting principle, and is partly attributable to the wholesome desire to avoid misleading creditors by showing such an important asset at more than current value at the date of the balance sheet.

Another point to note is that the valuation of the stock in trade is very often obtained independently of the accounting records by an actual physical count. Inasmuch as the selling price is different

<sup>2</sup> As George O. May has stated it: "... I should warn you that the terminology of accounting is somewhat loose and vague ... When you hear a reference to an accounting 'principle,' you may find that in reality it is nothing more exalted than a convention or rule of convenience." *Journal of Accountancy*, May, 1937, p. 334. His lecture on "Improvements in Financial Accounts" provides a useful historical background as well as a discussion of the problems of uniformity and of some possible lines for improvement. His statement should be regarded as a practical recognition that accounting principles are working rules sanctioned by experience rather than as any disparagement of accounting. For a fuller discussion of accounting principles and conventions, see H. A. Finney and H. E. Miller, *Principles of Accounting, Intermediate* (New York: Prentice-Hall, Inc., 4th ed., 1951), pp. 117-129.

from the purchase price, it is often inconvenient to keep a record of outgoing merchandise at its cost and so comparable to the account of incoming merchandise. Many businesses keep a record of purchases only at cost and of sales at selling prices, so that an accurate current record of the inventory balance cannot be had from the books of account. This situation makes necessary a counting and a valuation of the stock whenever a balance sheet is to be made. Even when there is kept at all times a constant record of the amount of the stock by the perpetual inventory method, it is verified from time to time by count.<sup>4</sup>

Another asset<sup>5</sup> that is customarily valued at the lower of cost-or-market on the same basis as inventory comprises temporary investments held as a support to cash in order to meet emergencies or unknown future needs. Such holdings are usually termed "Marketable Securities," and are shown close to the "Cash" in a properly arranged balance sheet. Permanent investments will ordinarily follow the general rule of valuation at cost.

*3 Modifications of the cost rule.* Many assets used in the regular operation of the business are subject to a lowering of value that is not due to market price fluctuations. Plant and equipment tend to wear out. Balances owed by customers (accounts receivable) are practically certain to be subject to some bad debt losses. Allowance for decreases in value of this sort is sometimes made by a deduction from cost before placing the figures in the balance sheet. In order, however, that original value may be known, it is preferable to show all such deductions or allowances on the face of the statement. In this way, the first principle of valuation is not changed but merely modified. The form for displaying this deduction is discussed below under Reserves.

In order to emphasize these principles of valuation, it might be well to add that it is ordinarily improper to alter the original cost to show either appreciation or depreciation in value where the change arises from fluctuations in market price, except in the case of depreciated inventories and temporary investments as noted above.<sup>5</sup>

**Purchases of assets.** The rule that assets should be shown at cost, although meeting the accounting requirement, leaves unstated

<sup>4</sup> For a fuller discussion, see *ibid.*, Chapters 16-18, "Inventories."

<sup>5</sup> For the exceptional treatment, see page 84, footnote 10.

the method of payment—a matter of the greatest importance to one who seeks to interpret the balance sheet. Property may be purchased by a corporation and paid for in any of three different ways: with cash, with property other than cash, or with stocks and bonds issued by the corporation. Where the purchase is by cash, the problem of analysis is simplified by the fact that, when cash passes, it is usually safe to assume that the assets that the corporation has obtained have a market value fully equal to the amount paid. In the case of assets obtained in exchange for other property or for securities, the valuation is set by the financial managers, and may be highly exaggerated or ultraconservative, according to the temperament and motives of those in charge. The most familiar example of overstatement is found in those newly promoted companies engaging in speculative enterprises. The only cost to the corporation when it pays with its own securities is the expense of having the certificates printed. As a result, a stock certificate is as likely to be issued for \$1,000,000 as for \$100,000 if it suits the purposes of the company's management.

Although this chapter is concerned with the manner in which the balance sheet is put together rather than with the method of analyzing it, the foregoing discussion has indicated the following points upon which the analyst should be informed: (1) the extent to which good accounting practice is likely to have been employed; (2) the probable changes in value—appreciation and depreciation—that have occurred but that have not been recorded on the books; (3) the method of purchasing the assets; and (4) the honesty and temperament of the management.

**Liabilities.** Strictly speaking, a liability is a debt or an amount owed to someone who has a right of action at law. Reference to the simple statement of the Orange Grocery Store (page 21), however, will show that the claims against the business are not all liabilities, in the strict sense of the word. The items on the liability side are of two kinds, those representing claims of creditors and those representing the claim or equity of the owner. The former show the amounts owed by the enterprise to trade creditors, banks, and, in certain cases, bondholders. These persons or concerns supplied a part of the property and have a claim for a fixed number of dollars.

The owners' claim or equity, on the other hand, is not for a fixed amount, but is the value remaining after the subtraction of the debts

from the assets. If any of the assets change in value, it is the owner's equity that registers a corresponding change on the opposite side of the balance sheet. In this way, the contributions of the owner or owners of a business serve as a financial shock absorber for the creditors, providing them with what is often referred to as a "margin of safety."

The balance sheet, then, might be defined as the dual financial picture of an enterprise, depicting, on the one hand, the properties that it utilizes, and on the other hand, the sources of those properties. The term *interests* would suitably apply to these sources or claims; but inasmuch as the use of the word *liability* is common, there is no objection to its use here, provided the essential difference between the owners' and the creditors' interests is kept clearly in mind.

Accountants call the owner's interest his capital and hence use the equation:

$$\text{Assets} = \text{Liabilities} + \text{Capital}, \text{or}$$

$$\text{Total property of business} = \text{Total owed creditors} + \text{Balance of value belonging to owner.}$$

This equation is the basis of the balance-sheet idea, and underlies the whole theory of account-keeping.

It is important to note this use of the word *capital* as meaning the owner's share in the business, because it differs from the current usage of the word. Ordinarily, to the businessman, capital means any and all property used in the business and is equivalent to the term *assets*; but in works on accounting it may be assumed that it is used to refer to the owner's interest except where stated otherwise. The term *net worth* is also used by some accountants to describe the owners' share.<sup>6</sup> Others prefer *ownership interest* (or *equity*) or *stockholders' equity* (for a corporation) because they feel that the word "worth" may convey the idea of *current worth* to the reader. Unfortunately any of these terms may convey that idea to a nonaccountant reading a

<sup>6</sup> The word *capital* is used in four different senses: (1) by political economists to mean production goods, that is, wealth employed in production of further wealth; (2) by accountants to mean net worth, that is, the owners' share in a business; (3) by lawyers to mean capital stock, that is, the stated, or par, value of stock issued by a corporation; and (4) by businessmen to mean assets. Confusion would be reduced if each group would use the more precise alternative given here for the word *capital*.

balance sheet. The latter must learn that the book values of assets and of the ownership interest follow certain accounting rules that result in dollar figures that may be substantially different from current or market worth. All of the foregoing terms for the ownership interest will be employed here from time to time because the reader must become familiar with all kinds of usage and must be able to interpret statements of the past as well as the present. The individual accountant, on the other hand, may adopt whatever he regards as the best usage for the statements he prepares.

**Classification of creditors.** The creditors may be classified as follows:

1. Secured creditors.

For example, a mortgagee secured by a lien on a piece of real estate.

2. Partly secured creditors.

The property pledged may not be worth enough to cover the debt completely. If the exact value of the pledge were determinable, such an amount could be regarded as falling under the preceding heading and the balance under the following heading.

3. Unsecured creditors.

a. Those with debts which have priority.<sup>7</sup>

(1) Taxes.

(2) Wages of employees.

(3) Certain debts incurred by an insolvent business, such as those incurred by a receiver or trustee.

b. General creditors.

The secured creditors are those who have some lien on specific assets and thus have a right to be paid from the proceeds of the sale of those assets if their claim is not paid in the course of business. This is true where real estate is mortgaged, or where personal property is pledged for the payment of a debt. Securities are frequently deposited for this purpose, in which case they are spoken of as collateral.

<sup>7</sup> Priorities (not in the order above) are detailed in the Federal Bankruptcy Act.

The preferred creditors are those having a right to prior payment through an act of law. Under the Federal Bankruptcy Act, all taxes legally due and owing to the United States, state, county, district, or municipality are preferred liabilities. Preference is also given to wages owed to certain employees that they have earned within three months before the date of commencement of bankruptcy proceedings, not to exceed \$600 for each employee. State laws may give other creditors, such as judgment creditors or bank depositors, a priority. Such priorities are recognized in the application of the **Federal Bankruptcy Act.**

All general creditors have the same rights to a share in the remaining assets in proportion to their allowable claims. If the property pledged to a secured creditor is insufficient to satisfy his lawful claim fully, he becomes a general creditor for the unpaid balance.

**Stating the owners' interest.** The interest of the owners is stated in the balance sheet in slightly different ways according to the legal form of the organization—individual proprietorship, partnership, or corporation. The arrangement is similar for the partnership and the individual proprietor.

If there had been a partnership of James and Wynn Hawkinson, instead of the sole proprietorship, in the illustrative balance sheet shown earlier in this chapter, the form would have read:

#### ORANGE GROCERY STORE

BALANCE SHEET, DECEMBER 31, 1951

<i>Assets</i>	<i>Liabilities and Capital</i>	
Cash . . . . .	\$ 1,200	Accounts Payable . . . . .
Accounts Receivable . . . . .	2,500	Notes Payable . . . . .
Merchandise . . . . .	8,500	Mortgage Payable . . . . .
Fixtures . . . . .	500	James Hawkinson, Capital . . . . .
Land and Building . . . . .	15,000	Wynn Hawkinson, Capital . . . . .
	<u>\$27,700</u>	<u>\$27,700</u>

However obscured the worth of the owners may be because of accounting terminology, the amount may be had by taking the excess of the assets of the business over the claims of creditors. With this principle as a basis, balance sheets are sometimes written in what is known as the "report" form, which is clearer to the untrained reader who is confused at finding "capital" under the heading "Liabilities." In the report form, the liabilities are listed below the assets, and the difference is labeled *Capital*, or *Net Worth*, thus:

## • ORANGE GROCERY STORE

## STATEMENT OF NET WORTH, DECEMBER 31, 1951

<i>Assets</i>	
Cash	\$ 1,200
Accounts Receivable	2,500
Merchandise	8,500
Fixtures	500
Land and Building	<u>15,000</u>
Total Assets	<u>\$27,700</u>
<i>Liabilities</i>	
Accounts Payable	\$ 2,000
Notes Payable	2,000
Mortgage Payable	<u>8,000</u>
Total Liabilities	<u>\$12,000</u>
<i>Net Worth</i>	
James Hawkinson, Capital	\$10,000
Wynn Hawkinson, Capital	<u>5,700</u>
Total Net Worth	<u>\$15,700</u>

This form, because of its simplicity, is of value in presenting the balance sheet to the layman, but is less valuable to the analyst because it makes mental comparisons between the two sides of the sheet more difficult. The greater value of the account form of balance sheet for analysis will be more apparent after a study of the internal relations that exist between the kinds of property and the various forms of liability.

**Par value.** The nature of par value has to be understood before the form for stating the owner's interest in the balance sheet of a corporation can be explained. In a corporation the owners are the stockholders, and their relationship with the enterprise is evidenced by stock certificates that state the number of shares that are owned. These shares may have a par value per share that is stated on the face of the certificate. The par value in legal theory is an amount which must be paid in full by a subscribing stockholder, else he or subsequent holders of his shares will become liable for any unpaid balance whenever the corporation is unable to meet its debts. In actual practice, the par value is a nominal figure of little or no aid in determining the actual value of the stock. The first reason for the lack of significance in par value is that stock may be paid for with property other than cash, which can be overvalued or undervalued. A board of directors can as readily declare and believe patent

rights to be worth a half million dollars as worth fifty thousand dollars. Inasmuch as, in the absence of any evidence of actual fraud, the law leaves the matter of value to the discretion of the directors, such a case is neither impossible nor improbable. A second reason for the lack of correspondence between par and actual values is that in recent years many directors have deliberately placed the par value at a very low, or nominal, value and shown only a fraction of the stockholders' original investment as Capital Stock. A third reason is that every corporation either accumulates profits or has losses—a fact that alters the original worth of the owners' interests, even if it were exactly par in the first instance.

**Stockholders' liability.** Ordinarily, the owners' or stockholders' interest in a corporation will appear as follows, except when the stock is without par value, a condition discussed later in this chapter:

1. When the stock has been purchased and paid for at par, the amount of the par value appears under the title "Capital Stock."

2. When more than par has been paid to the corporation for its stock, Capital Stock will show the amount of the par value and a special surplus account, such as Paid-in Surplus or Premium on Stock or, simply, Amount Paid the Company in Excess of Par (or Stated) Value, will show the excess paid in over par.

3. When less than par value is paid in, which is unusual, the account Capital Stock will show not par, but the amount paid in, except when it is intended to collect the balance within a short time; then the total par value subscribed may be shown as capital stock with the unpaid subscriptions owing by the subscribers appearing as an asset.<sup>8</sup> If any doubt exists as to possible payment, conservatism would dictate showing the unpaid balance as a subtraction from the net worth accounts. So important to stockholders and creditors is the matter of stock not fully paid that it should be clearly shown in the balance sheet, in either the text or a footnote.

The names of stockholders are not shown in the balance sheet, as the names of the members of a partnership are, chiefly because the

<sup>8</sup> The par value is ordinarily fully paid in, in order that no further liability may attach to the ownership of the stock. The state law may require full payment before issuance. The exceptional practice is illustrated in the balance sheets of the Federal Reserve banks, the stock of which is but 50 per cent paid in. It is improbable that the balance will ever be called, and the published statements show only the actual amount paid in.

reader has no interest in the stockholders as individuals, there being no recourse against them for debts incurred by the corporation. The corporation has a separate legal personality. The chief exception to the general rule—that a stockholder cannot be held save for his original contribution to the corporation's assets is that the stockholders in most states are assessable for an amount equal to the difference not paid whenever the stock is originally issued for less than par value. This possibility explains why the stock certificate when fully paid is stamped "fully paid and nonassessable."<sup>9</sup>

Special liability for debts owed to laborers for wages is found in a few states. To determine the amount of liability for a given corporation's stockholders and the conditions under which the liability would arise, the laws of the state of incorporation should be examined. Stockholders' liability is only significant when the statements of weak or insolvent corporations are being analyzed.

**Par value of stock.** The balance sheet of a corporation issuing stock with a par value of a half million dollars for undeveloped oil properties would appear as follows:

#### MIRAGE OIL WELLS CORPORATION

BALANCE SHEET, AUGUST 31, 1951

Assets	Liabilities
Oil Properties . . . . .	\$500,000 Capital Stock . . . . . \$500,000

All that can be told from the above is the total par value of the stock issued. The actual value of the would-be oil wells is a matter that will be more adequately determined by the results obtained from drilling. If there are 50,000 shares outstanding (that is, a par value of \$10 for each of these shares), the actual value of one share of stock is one fifty-thousandth part of the total value of the stockholders' interest—an amount which may be nothing or many times par.

When financial statements are filed with the Securities and Exchange Commission in connection with the registration of new securities, disclosure is required as to the basis for the valuation of assets. Such information is essential for the interpretation of the balance

<sup>9</sup> In a very few states stockholders of either state banks or insurance companies have an additional liability to creditors in the case of insolvency for an amount equal to the par value of their stock. Such liability is called "double liability."

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sheet, unless it is known that the bulk of the assets have been acquired for cash through ordinary buying channels.

**Paid-in surplus.** Occasionally, a corporation sells its stock for more than par, in which case the excess is shown as surplus. Banking corporations frequently do this in order to provide a buffer against possible losses in the early part of their career that would "impair capital."<sup>10</sup> Capital is said to be impaired when the owners' interest is reduced to less than the par value of the outstanding stock. The following statements illustrate how paid-in surplus is used to reduce the probability of capital impairment.

### FIRST NATIONAL BANK OF ALBANY

#### STATEMENT OF RESOURCES AND LIABILITIES

December 31, 1951

<i>Assets</i>			<i>Liabilities</i>
Cash .....	\$220,000	Capital Stock .....	\$200,000
		Surplus .....	20,000
	<u>\$220,000</u>		<u>\$220,000</u>

In the preceding balance sheet, two thousand shares with a par value of \$100 each have been sold for \$110. If there were a net loss of \$5,000 during the ensuing year, decreasing the assets by so much, the surplus on the opposite side would necessarily be reduced by an equal amount to show the loss in the interest of the stockholders. There would still remain, however, a surplus of \$15,000. If the same amount of cash had been subscribed for stock sold at par, the capital stock would have stood at \$220,000 at the outset and there would have been no surplus. Then had a \$5,000 loss occurred, there would have had to appear that disagreeable title "Deficit" in the balance sheet at the end of the year, thus:

### FIRST NATIONAL BANK OF ALBANY

#### STATEMENT OF RESOURCES AND LIABILITIES

December 31, 1951

<i>Assets</i>			<i>Liabilities</i>
Various Assets .....	\$215,000	Capital Stock ...	\$220,000
		Less Deficit ....	5,000
	<u>\$215,000</u>		<u>\$215,000</u>

<sup>10</sup> Note that *capital* is used here in the "legal" sense. (See page 26, footnote 6.) In the "accounting" sense of net worth, the "capital" is impaired as soon as losses reduce net worth below the owners' original investment.

The appearance of "Deficit" is due to the rule which keeps capital stock in the balance sheet at par value just as additions to the interest of the stockholders are shown under the separate heading of "Surplus." Formerly, when the accountant was less concerned with the effect of arrangement upon the reader, the Deficit item was shown as an addition to the asset column. This treatment grouped it with unlike items and left the reader to ascertain the owners' equity for himself.

In either case, the corporation has lost \$5,000, but, for reasons that are largely psychological, it is undesirable to show the word *deficit*. The majority of people find a golden suggestiveness about the word *surplus* and a sinister warning in the word *deficit*. Neither term has any essential relation to the strength or weakness of the corporation.

**Stock without par value.** The misleading nature of par value in the case of common stocks and the fact that it sets a minimum price for which stock must be sold regardless of market conditions has led to a wide use of common stock with no par value. Stock without par value puts the investor on his guard and makes him feel it necessary to inquire further into the real value of the security offered. There is a strong possibility that the financially unskillful may feel that par somehow constitutes "true" value, confusing the situation with that of bonds, where market value tends to move towards par, which is the face amount of principal, as maturity approaches.

Under the New York law, for example, a corporation may sell such of its shares as are without par value (1) for such consideration as its charter prescribes; or (2) at their fair market value, the judgment of the board of directors as to such market value being conclusive in the absence of fraud; or (3) at a price fixed by consent of those owning a majority of the shares entitled to vote at a duly assembled stockholders' meeting. All shares without par value so issued are deemed fully paid and nonassessable.

For purposes of taxation and regulation, the state sometimes requires a certain "declared value," to take the place of the discarded par value.<sup>11</sup> The growing tendency is to require the corporation

<sup>11</sup> Allied Chemical & Dye Corporation and Kennecott Copper Corporation are two major corporations using stock without par value. Their balance sheets

to state clearly the amounts contributed by the stockholders so that they can be distinguished from any surplus arising from earnings. If the Orange Grocery Store were incorporated and two hundred shares issued, each with a declared value of \$5, its balance sheet would read as follows:

## ORANGE GROCERY STORE, INC.\*

BALANCE SHEET, DECEMBER 31, 1951

<i>Assets</i>		<i>Liabilities</i>	
Cash . . . . .	\$ 1,200	Accounts Payable . . . . .	\$ 2,000
Accounts Receivable . . . . .	2,500	Notes Payable . . . . .	2,000
Merchandise . . . . .	8,500	Mortgage Payable . . . . .	8,000
Fixtures . . . . .	500	Capital Stock (200 shares without par value, declared at \$5 per share) . . . . .	1,000
Land and Building . . . . .	15,000	Paid-in (or Capital) Surplus . . . . .	14,700
	<u>\$27,700</u>		<u>\$27,700</u>

Any surplus arising later from retained earnings might be designated as Earned Surplus, Profit and Loss Surplus, or Retained Earnings. The tendency is to abandon the term "Surplus" and to adopt terms descriptive of the origin of the given surplus.<sup>12</sup>

The lessened emphasis upon par value in recent years and the taxation in some states of stock without par value as though it had a high par, such as \$100 per share, has led some corporations to adopt a low or even a nominal par value and show a large capital surplus.<sup>13</sup>

as of December 31, 1951, showed the following figures from which per share data were calculated:

	ALLIED CHEMICAL		KENNEDY COPPER	
	Totals	Per Share *	Totals	Per Share
Capital Stock . . . . .	\$ 44,281,980	\$ 5.00	\$ 53,199,636	\$ 4.92
Capital Surplus . . . . .	68,761,695	7.76	191,116,128	17.66
Earned Surplus . . . . .	158,744,790	17.92	333,768,253	30.84
Totals . . . . .	<u>\$271,788,465</u>	<u>\$30.68</u>	<u>\$578,084,017</u>	<u>\$53.42</u>

\* 8,856,396 shares.      † 10,821,653 shares.

<sup>12</sup> Changes in practice of major corporations are reported in American Institute of Accountants, *Accounting Trends and Techniques* (New York: Institute, 1951 ed.), p. 17. Research Bulletin No. 39 of the Institute recommended discontinuance of the term "Surplus" (1949). The term is not wholly abandoned in this text because the changeover is still in process, and the reader must be familiar with both old and new terms in order to read past as well as current statements.

<sup>13</sup> Prominent examples of nominal par common stock are found in Merck and Company, Inc. (16½ cents), Pepsi-Cola Company (33½ cents), and Remington Rand Inc. (\$.50). The less usual employment of nominal par for preferred is

**Book value of stock.** This discussion of par value has shown that in order to determine the book value of the common stockholders' equity, the surplus should be added to the Capital Stock account; if a Deficit account exists, it should be subtracted. In order to find the book value of the individual share, the total value of the stockholders' equity is divided by the number of outstanding shares. Surplus is sometimes to be found in the balance sheet under other titles, and then should be treated as though a part of ordinary surplus, in calculating book value. The title "Surplus" may be changed to "Undivided Profits," or "Retained Earnings"; or it may be disguised under the heading "Reserves," as described later in this chapter. (Further discussion of book value calculation is given in Chapter VII.)

**Preferred stock.** Preferred stock is frequently issued in addition to the common stock, which has just been discussed.<sup>14</sup> It differs from common stock in having a claim to earnings prior to that of the common. It may also be, and usually is, preferred as to assets, in which case the holder receives, in the event of liquidation, the par value of his stock or some other stated amount after the creditors are satisfied and before any payment is made to the common stock-

found in the \$6.00 cumulative preferred stock of Island Creek Coal Company, 25,269 shares with \$1 par value. It also has 1,187,730 shares of common with 50 cents par value. Its net worth section on December 31, 1951, showed:

		Per Share		
	Amount	Preferred	Common	
Preferred Stock .....	\$ 25,269	\$ 1.00		
Common Stock .....	593,865		\$.50	
Paid-in Surplus *	11,579,951	119.00	7.22	
Retained Earnings .....	20,811,384		17.52	
<b>Totals .....</b>	<b>\$33,010,469</b>	<b>\$120.00</b>	<b>\$25.24</b>	

\* Allocated by our calculation. preferred stock, \$3,067,011, common stock, \$8,572,940.

<sup>14</sup> Debenture stock, found on rare occasions in this country, is actually preferred stock. The term "debenture" is really misused when so applied to stock, for in its derivative sense the term means "owing," and should be applied only to a liability. In English practice, debenture stock does not mean shares of stock, but a debt—an absolute obligation to pay principal and interest at fixed times. It may be secured or unsecured. Thus, the Dunlop Rubber Company, Ltd., has an issue of 3½ per cent debenture stock, secured by a mortgage upon certain land, buildings, and equipment, and a floating charge upon the remaining assets. In general, Canadian financial practice resembles our own, but the Canadian Pacific Railway Company has perpetual 4 per cent consolidated debenture stock that is a first charge on the entire system.

holders. Preferred stock that makes no provision for a prior claim by its owner upon the assets is not preferred as to assets. Where provision is made, it may reasonably be balanced by the right of the common stockholders to take all of the assets after the preferred stockholders have received back their investment at par. In order to value the interest of the common stockholders, the nature of the preference that is given to the preferred stockholders must be known. Any unsatisfied claim for preferred dividends must be subtracted from the total net worth, even though it does not appear in the balance sheet, in order to arrive at the equity for the common stock.

Preferred stock may be cumulative or noncumulative. If it is cumulative, and the agreed dividend is not paid, the dividends that are passed must be paid before any dividend can be paid to the common stockholders. The dividends on a noncumulative share are ordinarily lost when the company fails to declare them at the customary time. Occasionally there is found a hybrid preferred upon which the dividend is cumulative-if-earned or cumulative for a limited amount.

Preferred stock may also be participating or nonparticipating, although the former type is relatively uncommon. Participating shares receive an extra dividend in addition to the regular return under certain conditions, as, for example, when the dividend rate on the common rises beyond a stated rate.

Ordinary preferred stocks should not be called "guaranteed." A guaranteed stock is either a preferred or common stock upon which a definite dividend has been promised by some outside guarantor, such as a parent corporation, so that the stock has become a credit obligation of such guarantor and has to be paid to avoid a default and insolvency.<sup>15</sup>

**Reserves.** The reserves constitute a class of items that the average reader of the balance sheet finds more than ordinarily difficult to interpret. The use of the term is decreasing. Formerly, they were often grouped in the balance sheet between the debts and the net worth so that their nature was made to appear indeterminate. A more

<sup>15</sup> The bonds and stocks of a subsidiary company are often guaranteed by the parent company to improve their investment standing. The Pennsylvania Railroad Company guarantees the dividend on the 7 per cent preferred stock of the Pittsburgh, Fort Wayne & Chicago Railway, whose main line road between Pittsburgh and Chicago it leases.

definite conception of the diverse nature of these accounts may be gained from an examination of a statement before and after their introduction.

Apparently, the only account affected is the surplus. This, however, is an incorrect notion. It is improper to relate them as a class to surplus, except to note that their omission would increase surplus, a result that could likewise be obtained by a failure to include any liability or by overstating certain assets.

The balance sheet before the introduction of reserves is as follows:

ILLINOIS REFINING COMPANY			
BALANCE SHEET, JUNE 30, 1951			
Assets		Liabilities	
Property	\$12,500,000	Accounts Payable	\$ 350,000
Investments	1,400,000	Accrued Expenses	20,000
Sinking Fund	50,000	Bonds	2,000,000
Cash	350,000	Capital Stock	7,000,000
Accounts Receivable	550,000	Surplus	7,730,000
Inventories	2,250,000		
	<u>\$17,100,000</u>		<u>\$17,100,000</u>

The following balance sheet reveals the situation after reserves have been set up.

ILLINOIS REFINING COMPANY			
BALANCE SHEET, JUNE 30, 1951			
Assets		Liabilities	
Property	\$12,500,000	Accounts Payable	\$ 350,000
Investments	1,400,000	Accrued Expenses	20,000
Sinking Fund	50,000	Bonds	2,000,000
Cash	350,000	Reserve for Depreciation	4,300,000
Accounts Receivable	550,000	Reserve for Taxes	130,000
Inventories	2,250,000	Reserve for Contingencies	350,000
		Capital Stock	7,000,000
		Surplus	2,950,000
	<u>\$17,100,000</u>		<u>\$17,100,000</u>

The effect of the reserves is to reduce the apparent equity of the owners of the business. In the first statement, this was \$14,730,000 (Capital Stock, \$7,000,000, plus Surplus, \$7,730,000), and in the second, only \$9,950,000. If there were 70,000 shares, with a par value of \$100 per share, then the surplus per share was reduced from \$110 in the first balance sheet to \$42 in the second. Inasmuch as dividends may be declared only out of surplus, the reserves do reduce possible

dividend declarations. The actual declaration is, of course, dependent on other factors as well, but the presence of surplus is essential.

**Classification of reserves.** For the proper understanding of reserves, it is necessary to classify them according to their relation to the other three classes of accounts in the balance sheet. They fall into three groups, although the analyst will find borderline cases that will be difficult to classify.\* The groups are:

1. Reserves that offset assets.
2. Reserves that are actual liabilities.
3. Reserves that are surplus.

**Reserves offsetting assets.** The reserve for depreciation of \$4,300,000 is actually an offset to the Property account shown on the opposite side at \$12,500,000. Buildings, equipment, machinery, furniture, and almost all the physical properties of a business form an endless procession of productive tools headed for the junk heap. Each year their life shortens, and the time approaches for their replacement. Where this truth is recognized, it is the usual custom to reduce the asset value at each accounting period by the proportionate share which that period bears to the whole life of the asset. These fixed assets (sometimes called "capital" assets) are being consumed by the production processes, and each year should show its share of the loss.

The method of showing the reserve for depreciation on the liability side of the balance sheet is confusing to many, and so it is considered preferable, for the purposes of analysis, to show it as a subtraction from the asset itself, thus:

Property		\$12,500,000
Less Reserve for Depreciation		4,300,000
		\$8,200,000

This treatment helps to show the nature of the Reserve account by coupling it with the value of the assets that are wearing out.<sup>16</sup> By

<sup>16</sup> Wall and Duning suggest the "capital strain" argument for placing the depreciation reserve between the total debt and the net worth: that the potential strain which the replacement burden may place on the business is then located so as to call attention to the potential debt or capital required, as the period of application approaches (A. Wall and R. W. Duning, *Ratio Analysis of Financial Statements*, New York: Harper and Brothers, 1928, pp. 80-81.) The argument understresses the "valuation" character of this reserve. Replacement is possible but not inevitable.

using the reserve as a subtraction from the asset instead of as a liability, the total of the asset column is reduced to show the book valuation of the assets, eliminating the corresponding inflation on the liability side. Increasingly, some less confusing title, such as Accumulated Depreciation or Allowance for Depreciation, is being used instead of Reserve for Depreciation.<sup>17</sup>

The most condensed form of presentation shows merely the net valuation of the property—in this case, \$8,200,000. This method is objectionable in that it fails to show the original cost of the properties and prevents the reader from finding out the total allowed for depreciation. Both cost and reserve are useful figures, and both are more important to the analyst than the blind figure representing the net present book value of the asset. (The net figure is called the "book value" of the asset.) Where only the net value is given, a rough idea may sometimes be gained as to the amounts of these allowances from the "statement of profit and loss," which will be studied later.

- Reserves or deductions of this first class are known to the accountant as valuation accounts, because, when read with the corresponding asset, they give the net valuation set upon the property. Other reserves of this class are those for obsolescence, for doubtful accounts, and for discounts to customers. Obsolescence is the premature loss of value in equipment that becomes out of date before it wears out, because of inventions and improvement in design of later models. It is usually taken into account only by those industries where constant progress of invention causes machines to be replaced regularly before they are worn out, as in the air transport field. Also, sometimes, obsolescence is compensated for, to a small degree and by indirection, in depreciation rates that allow for a limited life where an almost perpetual life would be possible through adequate repairs and maintenance. Reserves for doubtful accounts, now more frequently known

<sup>17</sup> See the Committee on Terminology recommendation for the restriction of the term "reserve" to the surplus reserve category (1948) in the American Institute of Accountant's Research Bulletin No. 34. For improving current usage, see the Institute's annual survey of corporate reports, *Accounting Trends and Techniques*. The Committee on Concepts and Standards of the American Accounting Association goes further and recommends that the term "reserve" be wholly eliminated from the balance sheet. A case is made against "earmarking" or "appropriating" surplus. "Reserves and Retained Income," *Accounting Review*, April 1951, pp. 153-156. This statement is analyzed by one of the committee members, S. Y. McMullen, on pp. 157-166 in the same issue.

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as Allowances, are a deduction from the notes and accounts of customers, and indicate the management's estimate of the reduction in the value of those assets that is likely to occur in their collection.

**Liability reserves.** The Reserve for Taxes of \$130,000 in the balance sheet of the Illinois Refining Company is an example of a liability covered by the title "Reserve." In this case, it is not only a true liability, but a debt that will mature in a very short period. The argument is sometimes advanced that the term "Reserve" is useful in this category because it indicates the element of uncertainty sometimes found in the tax liability estimate. Nevertheless, the practice is growing of simply stating the item of Federal Income Taxes under the current liabilities without any prefatory "Reserve for." Sometimes a modifying Accrued, Provision for, or Estimated is used.

Another important liability reserve is that for pensions. When a corporation agrees to grant a pension to employees, it is in effect making an addition to the wage compensation. The burden for this should be borne by the period that receives the services of the employees. It is a debt, and should not be permitted to fall as an expense in the later period when retirement has occurred and the employee is no longer producing. To neglect this point is to permit a balance sheet overstating surplus and understating debts. Corporate officials may, however, instead of understating the accumulating liability, overstate the amount, so that surplus is concealed.

**Surplus or net worth reserves.** A third type of reserve is illustrated by the Reserve for Contingencies of \$350,000. Such reserves are regarded as merely segregating a portion of the Surplus or Retained Earnings rather than reflecting a valuation of some asset or recognition of some liability. In some cases, classification is clearcut; in others, debatable. Practice in recent years has moved in the direction of placing the Reserve for Contingencies and similar items in the net worth section as a special part of Earned Surplus.

Provisions that serve merely to equalize profits as between years are regarded as undesirable. Formerly, the Reserve for possible future Inventory Price Declines was placed above the net worth section as though it were a suspended inventory valuation account. A charge was included in the income account even though it was regarded as an irregular form of loss. The experience and seasoned judgment of management may still dictate the use of such a "Reserve" even though its creation will not affect net income under the more common

current practice and the item itself is now commonly placed in the net worth section. There it will warn the reader that management regards prices as inflated and likely to react.<sup>18</sup> The analyst, however, will find it desirable for the purposes of uniformity in intercompany comparisons to regard such a "Reserve" as earned surplus in line with the growing weight of accounting practice.<sup>19</sup>

A similar line of reasoning might be applied by some to the Reserve for Self-Insurance, when a large corporation, instead of taking all of its insurance with outside companies, charges expenses with an amount based upon probable average losses and then sets up a Reserve against which subsequent actual losses are charged. If losses were shown as expense only when they occurred, the results might be highly irregular from year to year. If a liquidation theory were applied or the assets of the self-insurer were to be sold or merged, such a reserve on any given balance sheet date would constitute surplus. If the business is viewed as a going concern, however, losses will tend to keep the reserve around zero and it would appear desirable to exclude the reserve from the net worth section.<sup>20</sup> We must be careful not to revert from the accrual idea to an old-fashioned cash basis thinking. The point of time at which the loss happens cannot be the sole determinant in our thinking. Reserve classification must hinge upon whether the anticipated loss seems reasonably certain to occur.

<sup>18</sup> For example, the Eagle-Picher Company realized large gains from inventory appreciation during years of rising metal prices. Stockholders were warned. The Company added \$1.5 million to a reserve for inventory depreciation in 1948 and about twice that the year before, showing an accumulation of \$6.5 million as of November 30, 1948. In the second quarter of the following year, lead and zinc prices broke. The company was able to absorb a writedown of \$5.0 million in metal inventories from these reserves. *Barron's*, Aug. 8, 1949, p. 34.

<sup>19</sup> *Accounting Trends and Techniques* (New York: American Institute of Accountants, 5th ed., 1951), pp. 41, 73. Also Institute's Research Bulletin No. 31, *Inventory Reserves* (1947), and No. 28, *Accounting Treatment of General Contingency Reserves* (1947).

<sup>20</sup> Such a self-insurance reserve is operated by United Air Lines, Inc. to cover loss of or damage to aircraft in flight. The reserve was established in 1946. Amounts were charged each year to operating expenses that rose steadily with growing equipment investment from \$229,306 in 1946 to \$1,482,029 in 1951. The accumulated reserve after the deduction of varying losses was increased by credits in excess of losses totaling \$1,949,291 at the end of 1950. In 1951, the loss of five aircraft reduced the reserve to \$377,359. Prospectus of the Company, March 19, 1952.

An allied type of reserve for product warranty has been employed by Avco Manufacturing Corporation (1951).

Classification of the usual Reserve for Contingencies as surplus results from the possibility that the contingency may never occur. The analyst will, of course, look for the same possibility of excess or inadequacy in these more debated reserves excluded from net worth as he does in the case of valuation and liability reserves.

A surplus reserve reduces the Surplus account, but not the actual amount of surplus. It serves the purpose of restraining the hopes of those stockholders who regard surplus as a source of dividend distributions. Such a course is proper whenever it is necessary to conserve cash, which is the asset usually required to make a distribution. Reserves that are unmistakably in this third class are the reserves for working capital, for improvements, for dividend equalization, and for sinking fund. The name indicates in each case the reason of the directors for conserving the corporation's cash resources. In the great majority of cases, earned surplus is retained in the business without any surplus reserves being set up and used in various ways that make its distribution as dividends impossible.

**Reserve for sinking fund.** The utility of the surplus reserve may be illustrated by a study of the "reserve for sinking fund." The facts assumed, although much simpler than would exist in practice, will serve our purpose of showing how the reserve is not wholly superfluous, as some think. In the hypothetical case, a corporation made during 1951 a net profit of \$100,000, which is reflected in the increase of Cash and Surplus in the second balance sheet.

#### BALANCE SHEET

DECEMBER 31, 1950

Cash . . . . .	\$ 50,000	Bonds . . . . .	\$1,000,000
Other Assets . . . . .	1,950,000	Capital Stock . . . . .	1,000,000
	<u>\$2,000,000</u>		<u>\$2,000,000</u>

DECEMBER 31, 1951

Cash . . . . .	\$ 150,000	Bonds . . . . .	\$1,000,000
Other Assets . . . . .	1,950,000	Capital Stock . . . . .	1,000,000
	<u>\$2,100,000</u>	Surplus . . . . .	100,000
			<u>\$2,100,000</u>

It is desired to retire one tenth of the bonded debt yearly, but the purchase of the bonds would reduce their total to \$900,000 and bring the cash back to \$50,000. Since a \$50,000 balance is too small a sum to permit a dividend declaration in cash, it is decided to set up a

reserve, thus making the surplus unable to support an unwise dividend. The revised balance sheet, including this reserve but made up before the bonds have been presented for payment and cancellation, might read:

DECEMBER 31, 1951			
Cash .....	\$ 150,000	Bonds .....	\$1,000,000
Other Assets .....	1,950,000	Capital Stock .....	1,000,000
		Reserve for Sinking Fund	100,000
	<u>\$2,100,000</u>		<u>\$2,100,000</u>

One corporation, employing such a reserve under the terms of a debt agreement, proceeded to return the reserve to earned surplus after an interval of one year so that the balance sheet never showed more than the appropriation for the preceding year. Failure to allow the reserve to accumulate until the debt was fully retired was inappropriate because it is clear that the reserved surplus did not become available for dividends at the end of the year. It is true that surplus can be and usually is retained without the aid of the reserve device. Appropriated surplus is most common in the field of railroad accounting, where it may be so listed, sometimes with an indication of purpose, without the use of the term reserve.

**Funds and reserves.** In the discussion of reserves, it is clear that the term has been used entirely differently from popular usage. A reserve is popularly thought of as a sum of money set aside or invested for some special purpose. When a sum is so set aside, the accountant calls it not a "reserve" but a "fund."<sup>21</sup> In the foregoing condensed balance sheet, the cash might have been reduced by \$100,000, if that sum had been set aside definitely for the sinking fund. This amount would then appear as the asset "Cash in Sinking Fund," or merely "Sinking Fund." In the balance sheet of the Illinois Refining Company, the "Sinking Fund" account indicates that there was an amount set aside, probably in connection with some plan for the retirement of its bonded debt. This fund might be in either cash or investment securities. If a reserve for sinking fund had appeared

<sup>21</sup> Sometimes a balance sheet fails to follow the current accounting usage and employs the word *fund* for a liability, usually to denote a reserve account. An unusual case of a special fund is the Plant Improvement and Replacement Fund first set up in 1936 by Libbey-Owens-Ford Glass Company. It was invested in cash and short-term Governments. Out of that fund came the first "Pilkington flow process" glass-producing plant at Ottawa in 1938.

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on the opposite side of the balance sheet, the presence of an equivalent fund among the assets would have made the former item a "funded reserve."

If complete provision is to be made for contingencies, the board of directors will not only set up a contingency reserve, but it will also invest a suitable amount in liquid securities that will provide ready funds for the emergency. Generally, no such fund is provided. The management argues that the capital will be more profitably employed in the ordinary course of the business than if set aside in a special fund. Under such circumstances, the directors must hope that in the event of the contingency, the remaining assets will provide cash or be an adequate basis for loans or a sale of securities sufficient to meet the occasion. Sometimes the contingency might be of such a nature that its happening would not give rise to a need for cash. The hazard might lie in a possible loss in the market value of an asset which would not impair its usefulness in the operation of the business.

The following balance sheet shows how the statement appears when the reserve is funded.

### AMERICAN RUBBER COMPANY

#### CONDENSED BALANCE SHEET

Assets		Liabilities*
Cash	\$ 6,000,000	Accounts Payable
Accounts and Notes Receivable	12,000,000	Notes Payable
Inventories	30,000,000	Preferred Stock
Contingency Fund— Marketable Securities	10,000,000	Common Stock
Plant and Equipment	<u>70,000,000</u>	Surplus
	<u>\$128,000,000</u>	Reserve for Contingencies
		<u>\$128,000,000</u>

If the management regarded the fund as unnecessary or undesirable, it might, instead of investing the \$10,000,000 in a special fund, use the amount for additions to plant. If the latter course were adopted, the Reserve account would still be available to absorb any loss up to \$10,000,000, which would otherwise reduce surplus; but the cash necessary to meet the emergency would have to be obtained by financing. Ordinarily, a concern in the excellent condition shown above would have no difficulty in such a situation, although unusual conditions have been known to give trouble even to such apparently well-entrenched corporations.

**Conclusion.** This chapter has been a brief review of the nature and manner of accounting for the three classes of items in the balance sheet: the assets, or properties; the liabilities, or debts; and the net worth, or balance of value remaining for the owners. The so-called accounting reserves should be studied. If not already located in their proper place in the balance sheet as asset-deductions, liabilities, or net worth, they should be relocated by the analyst. Ordinarily that is done in the present-day balance sheet and often terminology has been improved to remove the misleading word "Reserve." The problems and debate over borderline reserves, which are usually of the net worth type and are sometimes placed between the liabilities and net worth, will be discussed more fully later.

Before a balance sheet can be interpreted, the accounting conventions, such as the lower-of-cost-or-market valuation of inventory and the cost-less-depreciation figure for fixed assets, must be understood by the reader. Those who have suggested from time to time radical "reforms" that would require the reporting of "true current values" as of the date of each balance sheet generally ignore the mountainous task any large concern would have if it revalued thousands of asset items annually and recorded the results. Aside from the uncertainty of such a value concept, such proposals generally overlook the confusion, the cost, and the chicanery that would result from the adoption of their innovations. Rules have no sacredness, but nevertheless they are the product of experience and, even though like most practical compromises they fall short of perfection, serve a useful purpose. The better the working rules of accounting construction are understood—and only the highpoints can be reviewed in this and the next chapters—the more can be gleaned from the analysis of financial statements.

## CHAPTER III

### The Construction of the Profit and Loss Statement

**Function of the profit and loss statement.** The balance sheet provides a single picture of the financial status of a business on a certain date. Inasmuch as changes are taking place constantly, a summary of the operations that occur between the construction of the periodic balance sheets is necessary. All changes may be said to be significant—for example, the conversion of cash into inventory and the substitution of a long-term bond issue for bank indebtedness—but interest centers around those transactions in which the business suffers a loss or realizes a gain. The profit and loss statement singles out and summarizes those transactions in which there is a loss or gain for the owners of the business. Such a statement of the operations of an enterprise is a historical record for a past period. It is useful (1) to the management desirous of critically analyzing the past and (2) to creditors and investors anxious for a basis upon which to forecast more accurately the future of the business.

As a practical matter, the discussion will have to include (1) all gain or loss *recorded* during the period, regardless of whether such items are the effect of operations falling wholly within the period, and (2) even certain items not actually gain or loss, such as dividends representing a distribution of profits, in order to be sure that no profit or loss elements are overlooked.

**Profits not reflected by cash.** A common error is an undue emphasis on the asset, Cash. The bank account is frequently mistaken for a thermometer of prosperity. There are any number of possible combinations in which this may not be true. Frequently an expanding business with mounting profits has a bank balance much too small for its needs, whereas a declining business may show a steady cash balance. Merchandise may be decreasing and shopworn, or the fixed

investment in buildings and fixtures may be deteriorating, while cash remains fairly constant or fails to increase rapidly enough to offset the loss of these other assets. Even very large cash balances should not be regarded as a sign of prosperity.

**Fiscal period.** The statement of profit and loss is the condensed and classified record of the gains and losses causing changes in the owners' interest in the business for a period of time. Inasmuch as the balance sheet is ordinarily published annually, the statement of profit and loss usually covers the activities for the intervening period of a year. Ordinarily this period coincides with the calendar year. Sometimes it is more convenient to close the books on some date other than December 31, in which case the fiscal year is distinct from the calendar year. A usual reason for the adoption of a special year is the opportunity which it offers for taking the inventory in an inactive season when the stock of goods is normally very low, as in the case of meat packers (October) and department stores (January). (For further discussion, see page 103.) Reports of profit and loss may be published for shorter periods than a year when public interest warrants. Major industrial and utility corporations generally publish condensed earnings figures quarterly; railroads, monthly. Management will ordinarily have a monthly statement and key figures even more often.

**Titles.** The titles "Profit and Loss Statement" and "Statement of Income" are most frequently given to this report of changes in the owners' interest resulting from earnings. Other titles, such as the following, are often used, however, and there is no uniformity of practice.

1. Statement of Income and Earned Surplus.
2. Income Account, or Statement.
3. Statement of Income, Profit and Loss.
4. Statement of Income and Expense.
5. Statement of Earnings.
6. Statement of Operations.

**Relation to balance sheet.** The chief difficulty of the average reader is to understand the relationship between the profit and loss statement and the balance sheet. The two are interrelated, and not independent; the former states the nature of those transactions that have changed the earned surplus as reported in two successive bal-

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ance sheets. A comparison of the two balance sheets will also reveal the effects of other transactions that cause no gain or loss but often have a considerable bearing upon financial condition and subsequent profitability.

The interrelation of the two statements is best shown by a study of a simplified balance sheet and a profit and loss statement for the year following it, such as appear on the opposite page.

For the sake of simplicity, it may be imagined that these transactions were made on a cash basis, where that was possible. Before the sales were made, it would be necessary to assume production. These outlays (line 2) would be for material, labor, and factory expense, and, assuming a cash basis, would affect only the asset side. The asset Cash would be reduced by \$19,000,000 and the inventories increased by that amount. When the sales are made (line 1), however, the transaction is more complex, because, although inventory is reduced, the total assets are increased by \$7,000,000 on the assumption that over the whole year production neither increased nor reduced the amount of inventory on hand. The change necessary on the liability side to balance this increase in assets resulting from what is called the manufacturing gross profit or gross margin is an increase of \$7,000,000 in the Profit and Loss Surplus, which latter account finally records these changes in the stockholders' interest.

Item 4 represents a cash outlay for services that are required in the conduct of the business. This loss of cash from the assets is offset on the liability side by a reduction of surplus. Item 6, probably representing the income from the securities, has just the opposite effect; that is, it increases cash and surplus.

Inasmuch as the corporation does not pay its Federal income taxes until the following year, the provision for such taxes (line 8) upon the earnings of the year 1950 causes no immediate outflow of cash such as has been assumed for other expenses. Instead a liability is set up for Taxes Accrued (or Reserve for Taxes). During the following year, when the actual cash payment is made, the decrease in the asset Cash will be offset by a reduction in the reserve for taxes, and not in surplus. The inclusion of this item in the profit and loss statement and the consequent change in the balance sheet work justice between the two years—1951, the year under consideration, and 1952, the ensuing year. The surplus is reduced in the year 1951 when the tax liability was being incurred and not in 1952 when the payment

## CONSTRUCTION OF PROFIT AND LOSS STATEMENT 49

was made. Failure to show this would overstate the net income in the profit and loss statement for the period and the surplus in the balance sheet at the end of the year. On the other hand, the omission would have made the tax appear as one of the expenses in the profit and loss of the second year, when it was paid, and so would have caused an understatement of the profitability of that period.

### FLYING BOAT MANUFACTURING COMPANY

#### GENERAL BALANCE SHEET, DECEMBER 31, 1950

<i>Assets</i>		<i>Liabilities</i>	
Cash . . . . .	\$ 600,000	Accounts Payable . . . . .	\$ 1,500,000
Marketable Securities	2,200,000	Preferred Stock . . . . .	16,000,000
Accounts Receivable	5,200,000	Common Stock . . . . .	16,000,000
Inventories . . . . .	8,000,000	Profit & Loss Surplus . . . . .	3,200,000
Plant &		Contingency Reserve . . . . .	200,000
Equipment	\$12,000,000		
Less Accrued			
Depreciation	<u>2,000,000</u>	10,000,000	
Investments	1,300,000		
Patents and Good Will	9,600,000		
	<u>\$36,900,000</u>	<u>\$36,900,000</u>	

#### STATEMENT OF PROFIT AND LOSS

##### For the Year Ended December 31, 1951

1. Sales Billed . . . . .	\$26,000,000
2. Production Costs . . . . .	19,000,000
3. Manufacturing Gross Profit (or Gross Margin)	\$ 7,000,000
4. Selling and Administrative Expenses . . . . .	1,900,000
5. Operating Prof . . . . .	\$ 5,100,000
6. Other Income . . . . .	200,000
7. Gross Income . . . . .	\$ 5,300,000
8. Provision for Federal Income Taxes . . . . .	2,600,000
9. Net Income . . . . .	\$ 2,700,000

##### Deductions:

10. Reserve for Contingencies . . . . .	\$200,000
11. Preferred Dividends . . . . .	800,000
12. Common Dividends . . . . .	800,000
13. Net Addition to Surplus . . . . .	1,800,000
14. Surplus at Beginning of Yea . . . . .	\$ 900,000
15. Surplus at December 31, 1951 . . . . .	3,200,000
	<u>\$ 4,100,000</u>

*Note:* Some would avoid the use of successive balances (lines 3, 5, and possibly 7) reasoning that the various costs and expenses, including taxes, are inseparable parts of the operations and that intermediate figures may and do lead to much economic nonsense. For analytical work, however, the arrangement may have utility.

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At this point (line 9) we arrive at the net income or net profit for the period. The accountant does not actually record the effect of these individual transactions upon the surplus account as they occur. We have indicated that effect here in order to show more clearly the relation between the balance sheet and the profit and loss statement. For example, when dividend income is received, the increase in the balance sheet cash account would be recorded, but the change in surplus would be shown in a special income account called Dividend Income until the end of the period. Similarly, a salary payment would be recorded in the cash account, but the expense deduction from surplus would be recorded in an appropriate expense account. Only at the end of the period are these various gain and loss accounts brought together in a summarizing account, typically the Profit and Loss account, the balance of which is then transferred to Earned Surplus.

The purpose of keeping these detailed influences upon surplus in temporary accounts is to classify them and provide the details for the profit and loss statement. Otherwise the laborious job of analyzing a host of gains and losses recorded without system in the surplus account would be necessary at the end of each period or whenever such information was required.

A few items that change surplus, however, may be recorded at once in that account or, if they are kept in temporary accounts, are transferred directly to the surplus account rather than to the profit and loss summary account. The nature of these less frequently occurring items will be discussed and analyzed more fully later. But this accounting procedure has to be remembered because of the line of distinction that the accountant has drawn more and more sharply in recent years between what he calls "profit and loss" and "surplus" items, even though, as has been seen, the former impinge upon surplus. Because of controversy, it is not always possible to state with precision what will be classified as "surplus" items. In general, they will consist of (1) distributions of earnings to stockholders; that is, dividend payments (more strictly, dividend declarations) (lines 11, 12); and (2) transfers to and from surplus reserve accounts (line 10), and sometimes gain or loss items that are related to previous years.

Because of the accountant's distinction between profit and loss and surplus items, he often divides what has been shown as a profit

and loss statement into two parts, applying that title only as far as line 10. The second section will start with the beginning surplus balance, add net income, and then show surplus changes to arrive at the concluding surplus balance. This second section or statement is most often called the Statement of Earned Surplus. If the two are combined as here, the accountant who is careful about terminology is likely to call the results a Statement of Income and Earned Surplus, or occasionally a Statement of Income, Profit and Loss, and Earned Surplus. Whatever form is employed, the analyst will want both sections to insure a complete picture of what has happened to the Earned Surplus between successive balance sheets. He may also need to rearrange or reclassify items either to improve comparability or to suit his particular analytical objective more satisfactorily.

The end results of the assumed transactions during 1951 are reflected in the following balance sheet for December 31, 1951.

### FLYING BOAT MANUFACTURING COMPANY

#### GENERAL BALANCE SHEET, DECEMBER 31, 1951

Assets		Liabilities
Cash	\$ 4,300,000	Accounts Payable
Marketable Securities	2,200,000	Taxes Accrued
Accounts Receivable	5,200,000	Preferred Stock
Inventories	8,000,000	Common Stock
Plant & Equipment	\$12,000,000	Profit & Loss Surplus
Less Accrued Depreciation	2,000,000	Contingency Reserve
Investments	1,300,000	
Patents and Good Will	9,600,000	
	<hr/> \$40,600,000	<hr/> \$40,600,000

This statement is unreal in two respects. In the first place various other balance sheet account changes would have been likely besides those shown. If growth had occurred, the amounts of accounts receivable, inventories, and accounts payable would probably have increased. In the second place, no further depreciation of plant and equipment was recorded. If depreciation of \$500,000 were among the total expenses shown as production costs (line 2), then so much of that expense would have represented a reduction of the asset Plant and Equipment rather than Cash. That loss of value would have been

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shown as an increase in the Accrued Depreciation rather than as a direct decrease in the Plant figure.

Such an item, along with the tax accrual, should emphasize that profit and loss may result from a change in any asset or liability and not merely from a change in the cash even though the latter is most often used to illustrate the principle. Securities may become worthless, customers may become bankrupt, a plant may be destroyed, and patents expire with time. When such facts are recorded on the books, thereby reducing the proper asset account, the profit and loss statement will show the loss in that year, and the surplus in the balance sheet at the close of the year will be reduced. In a corresponding manner, the incurring of liabilities or the increasing of reserves may cut down surplus. If the corporation is made the defendant in a patent suit or an action for damages and loses the case, a debt is incurred. Inasmuch as the assets are unchanged, the increased liabilities reduce the interest of the stockholders, and a reduction in surplus appears. The profit and loss statement must not be associated with any one asset or liability, but must always be regarded as the explanation of the year's changes in surplus.

This recital brings out the distinction between a statement of income and expense and a statement of receipts and disbursements—a distinction that is not clear to many. The former recapitulates changes in surplus; the latter, changes in cash. "Income" or "Revenue" refers to amounts actually earned during the period of the report, regardless of the time or the form of the payment, and "Expense" to any loss occurring within the period, without regard to the amount or time of the cash expenditures or disbursements.

The statement of cash receipts and disbursements is now regarded as inadequate for the practical purposes of most businesses. Some service businesses and professional persons may choose to be excepted. About the only organizations of importance that adhere generally to its use are institutions, such as churches and charitable societies, and governmental units. Even among these, we find a growing use of commercial methods. Although the employment of the balance sheet and the income statement by such organizations is somewhat unusual, doubtless the successful experience of some of the larger charities and progressive municipalities in this direction will have a strong effect. The effects of the departure from a "cash basis" to one that gives recognition to the timing of the profit- or loss-

making event rather than to the transfer of cash are illustrated in the following discussion of accruals.

**Accrued income.** Certain obligations accumulate from day to day to be settled on periodical occasions. An accrual is that portion of the obligation that has accumulated at the date of the balance sheet, and it is placed in that statement for the purpose of showing the condition of affairs more accurately. If a firm owns a bond paying interest semiannually, and a balance sheet is constructed three months after an interest date, the asset "Accrued Interest Income" should appear, for there is three months' uncollected income that has not matured but has been earned. If the bond were sold, the accrual would be calculated and added to the quoted price of the bond. On the other hand, from the standpoint of the concern that owes the bond there is an accrued interest liability for the three months' interest.

Accruals are of chief importance in the studies of earnings. In the balance sheet they appear of minor nature; but the difference they may make in the correct calculation of earnings is considerable. In the case of the above bond, the omitted income was for three months—a fourth of the total interest for the year.

In the following example, the change in assets is small in percentage, but considerable in the net income. If an investor bought some real estate on July 1 and collected his monthly rental on the first of each following month, at the end of the year he would have collected but five-sixths of the annual income the property had earned for him. If a monthly rental of \$500 is assumed, the statements might appear as on the following page.

**Accrued expenses.** Accrued expenses are similar in character but opposite in effect to accrued income, and consist of such items as interest accrued on notes, bonds, or mortgages payable, wages accrued, and taxes accrued. An accrued expense is a liability similar to an account payable. By the introduction of accrued expenses into the liability side of the balance sheet, the surplus is reduced. As a consequence, the profit and loss statement, which explains the changes in the surplus, will show increased expenses for the period. This restatement of expenses is only fair, for a period's operations should not be permitted to escape the burden of an expense by postponing its payment to the next accounting period.

The correct allocation of expense and income to the accounting period in which the income was earned or the values were consumed

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**BALANCE SHEET, DECEMBER 31, 1950**

**(a) Cash Basis**

<i>Assets</i>	
Cash .....	\$ 2,000
Real Estate .....	60,000
	\$62,000

**(b) With Accruals**

<i>Assets</i>	
Cash .....	\$ 2,000
Accrued Rents .....	500
Real Estate .....	60,000
	\$62,500
<i>Liabilities</i>	
Mortgage Payable .....	\$10,000
Capital Stock .....	50,000
Surplus .....	2,500
	\$62,500

**PROFIT AND LOSS STATEMENT**

**FOR THE SIX MONTHS ENDED DECEMBER 31, 1950**

**(a) Cash Basis**

Rental Income .....	\$2,500
Operating Expenses .....	900
Net Income .....	\$1,600

**(b) With Accruals**

Rental Income .....	\$3,000
Operating Expenses .....	900
Net Income .....	\$2,100

(that is, became expense or cost or loss), regardless of when cash is affected, is the principle which characterizes the accrual basis of accounting as opposed to the cash basis. It is the method approved wherever accountants aid in the preparation of the financial report. To calculate income and expense on the cash basis is inaccurate. Those who are not disposed to perform the extra labor necessary to make these accruals, argue that these accruals about offset one another. This may be true on occasions, but is just as likely not to be true. What the analyst wants is as much of the truth as is possible. In the field of business, good accounting practice always uses the accrual basis. The accounts of individuals and small businessmen are often kept on a "cash basis," however, because it is simpler and sometimes has an income tax advantage.

**Deferred income.** The expression "accrual basis" implies the calculation not only of accrued income and expense, but also of deferred income and expense. Deferred income is income which is received, or for which another has become liable, before it has been earned. Deferred expense is an expense paid for or for which the business owes before the service or article has been used.

## CONSTRUCTION OF PROFIT AND LOSS STATEMENT 55

The following condensed balance sheet of a commercial bank will illustrate the use of a deferred income item:

<i>Resources</i>	<i>Liabilities</i>
Various Assets . . . . .	\$1,000,000
Various Liabilities . . . . .	\$ 700,000
Unearned Discounts . . . . .	5,000
Capital Stock . . . . .	100,000
Surplus . . . . .	195,000
<u>\$1,000,000</u>	<u>\$1,000,000</u>

A bank that discounts its customer's note makes its charge for the use of the money in advance. A merchant, for example, takes his \$10,000 sixty-day note to the bank. He discounts it at 6 per cent and receives \$9,900 credit against which he can draw his checks. The bank has taken out its \$100 discount for sixty days, but will have earned it with the passage of time only. For this reason, if the bank includes the \$10,000 note among its assets at full face value without any qualification, it is counting its chickens before they are hatched, or speaking literally, counting its profits before they are earned. Such a treatment would inflate surplus. By placing the deferred income, "Unearned Discounts," on the liability side, the surplus is reduced to the proper amount.

Unearned discount is a liability in the sense that the bank still owes its customer for the portion of service it will have to render up to the date the note comes due.<sup>1</sup> In a similar sense, the landlord owes his tenants for rentals received in advance; the publisher, for subscriptions received in advance; and the manufacturer, for advance payments on contract. These items all appear on the liability side, but possess a distinctive characteristic: unlike the ordinary debt, they are not liquidated by the payment of cash, but are paid in services or goods. Furthermore, in the liquidation of the deferred income it is expected that a portion will become profit.

**Deferred expenses.** Deferred expenses are services or supplies, ordinarily regarded as expenses, that have been paid for or shown as a liability, but that at the date of the financial statement have not been wholly used or consumed. They are also called "prepaid" ex-

<sup>1</sup> From a financial or actuarial point of view, it is more accurate to say that the face of the note is a future and not a present liability and that the note minus the discount represents its present value at the date of the balance sheet. Unearned discount might be regarded as a valuation account offsetting the loan asset. Similarly, Bond Discount, often classed as a deferred expense, is a counter-item to bond liability for the issuer.

## **56 CONSTRUCTION OF PROFIT AND LOSS STATEMENT**

penses. If on the last day of the year it is found that the insurance or rent has been paid for a part of the following year, it would be unfair to burden the expenses of the current year with this prepaid expense. For this reason, the portion of the expense that represents prepayment is not included in the expenses in the profit and loss statement. The net profit for the year is correspondingly larger than it would be on the cash basis. The prepayment constitutes a thing of value to the business and hence is listed among the assets in the balance sheet.

A few expenses that are likely to be met in advance are insurance premiums, rent, postage, and office supplies, and prepaid discounts on borrowing. These items are of varying importance. In some cases it will be found that a very serious difference might arise from a failure to take them into account. Such would be the case with a surface mining enterprise in which considerable expense had been incurred to lay ore or coal bare. There would be no tangible equipment or structure which could be termed "assets proper," and yet to count the cost of removing this overburden as a current expense would be clearly unfair. Such expenditures constitute a charge to be deferred to the operations of the year in which the product is removed and sold.

**Summary of accruals.** The following outline summarizes the effects of the use of the accrual basis in the preparation of the financial statements as contrasted with the results from the use of the cash basis:

<i>Item</i>	<i>Effect on Profit and Loss for Period</i>	<i>Effect on Balance Sheet</i>
1. Accrued income	Increases profits	(a) Listed as an asset. (b) Increases surplus.
2. Accrued expense	Decreases profits.	(a) Listed as a liability. (b) Reduces surplus.
3. Deferred income	Decreases profits	(a) Listed as a liability. (b) Reduces surplus.
4. Deferred expense	Increases profits.	(a) Listed as an asset. (b) Increases surplus.

Some accountants will prefer to avoid the words "income" and "expense" in listing these items in the balance sheet, and will use more descriptive titles, such as Accrued Interest Receivable instead of Accrued Income.

This discussion serves to show some of the technical complications

incident to the preparation of a statement of earnings. It is much more than a report of cash received and disbursed.

**Profit and loss arrangement.** Although the arrangement of the profit and loss statement is not uniform even when professionally prepared, certain general principles are expected to apply. (1) Transactions not a part of the regular and central operations should be separately stated. Where very different kinds of operations are conducted, departmentalization of results is desirable. (2) Any unusual or nonrecurring items, if of material amount, should be reported separately. (3) Gain or loss that are the result of previous periods should be separately indicated if of more than negligible amounts. (4) Items that are not strictly gain or loss, such as dividend distributions and surplus reservations, should be segregated. What the form of separation will be varies, but full disclosure will permit the analyst to rearrange where necessary to suit his purposes. He may reasonably expect a good statement to fall into three general divisions. The first section should relate the earnings of the regular and most significant operations; the second, the effect of the incidental, but not unusual, operations; and the third, the extraordinary or nonrecurring items.

**Operating section.** The first division should be the *operating* section and state the operating income and operating expenses. The difference is called the *net operating profit* (or *loss*), or the *net income from operations*. If a railroad is under consideration, its operating section will have to do only with its sale of transportation service. A manufacturer or merchant's operations will have to do with the production or purchase and sale of commodities.

The operating section of the statement of mercantile concern might read as follows if it were condensed:

Net Sales		\$100,000
Cost of Goods Sold		60,000
Gross Profit		\$ 40,000
Selling Expenses		\$20,000
Administrative Expenses		10,000      30,000
Net Trading (or Operating) Profit		\$ 10,000

The manufacturer would merely substitute "Production Costs of Goods Sold" where the merchant puts his "Cost of Goods Sold." In popular treatment, "Gross Profit," or the difference between cost and sales price, may be referred to as the "profits of the business." This

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usage is misleading, and the expression "profits of the business" should be applied only to the net profit.

Although the titles in the operating section vary, the form is essentially the same in all types of business. In the case of the railroad, the item "sales" consists of freight revenue, passenger revenue, and miscellaneous revenue. From this are subtracted the costs of rendering the transportation service, consisting of transportation expenses, such as the wage bill, the cost of maintaining the roadbed, structures, and equipment, the cost of getting business through the traffic department, and similar costs. Some report wages separately. Although this information is interesting and sometimes of value, a more generally useful classification is along functional or departmental lines, such as the distinction between production and selling or transportation and maintenance expenses.

**Nonoperating section.** After the operating section should come recurrent incidental, though not always unimportant, transactions in what is often referred to as the *nonoperating* section. Nonoperating income is also spoken of as "Other Income" or "Additions to Income."

The most usual source of this incidental income is income from investments. If, however, the corporation were a holding or investment company organized primarily for the purpose of owning securities, the revenue from that source would cease to be incidental. In such a case, the income from investments would be operating income. The distinction between operating and nonoperating income is made for the sake of clearness in analysis, and the separation should always be made with an eye to its effect in that respect.

Nonoperating expenses consist of (1) fixed charges, which, if included in operating expenses, would make the net operating profit useless as a test of operating efficiency; and (2) expenses incurred in securing nonoperating income. Of the nonoperating expenses, interest on borrowed funds is the chief. Some corporations may find it advantageous to raise money by means of bonds and stock, rather than by stock alone. In a comparison of the profit-making capacity of two enterprises, the amount of interest charges will depend upon whether, and how much, debt is used—a financial, and not an operating factor. For this reason it is desirable to state interest charges separately when comparing the earnings statements of the two organizations with a view to determining their relative operating efficiency.

Sometimes taxes, because they are expense factors beyond the control of management, are treated as nonoperating expense. Generally, a distinction is useful. Taxes related to wages, like the social security taxes, will be classified in the same category with the given wages; taxes on real estate, with the department or function using the real estate; and only income taxes will be separated as a nonoperating or financial cost.

Other items that are less frequently found under nonoperating expense are rent, cash discounts to customers, insurance, and royalties. The most common treatment is to include among operating expenses all of these items except cash discounts, which are most suitably handled as a deduction from sales. Store rent for retailing establishments is a sufficiently important item to warrant reporting it as a separate expense. Merchants that own their premises have to earn so much more as operating net income (percentagewise) to provide the capital return for mortgage interest and return on ownership equity; the equivalent cost for the nonowner is the rent. However, the treatment of store rent as a nonoperating, or financial, cost would not make the profit and loss statements of owners and renters comparable. Owners will still have operating expenses for repairs, building depreciation, real estate taxes, and insurance that will replace in part the eliminated rent expense. This kind of noncomparability of apparently similar businesses will concern us more as we turn from statement construction to analysis.

**Unusual and irregular gains and losses.** Separation of the unusual and infrequently occurring gains and losses from the regular items discussed thus far is desirable. Sometimes these irregular items are merely reported in a list that includes nonoperating items. Segregation either by the accountant or the analyst permits better estimates of probable future earnings based on the accountant's history of the past. A useful distinction is sometimes made in the classification of these irregularly occurring items on the basis of whether they are the result of events during the fiscal year or during prior years. Thus, a write-down of inventory from cost to a lower market value at the year-end would fall in the first class and be called a Profit and Loss item, but the discovery that taxes for a prior year were in excess of the amounts accrued would result in a Surplus charge. This differentiation accords with the previously mentioned practice of gathering all balances entering into the Profit and Loss statement

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into a summarizing Profit and Loss account in the ledger but placing adjustments that should have been reflected in the operations of prior years in the Surplus account. This treatment recognizes that Earned Surplus shows the accumulated earnings retained in the business from operations of previous years.

Distinctions between the current period and the past are not clear-cut. A gain or loss on the sale of fixed assets is generally placed in the Profit and Loss class because it is deemed to accrue at the time of sale. Actually, it may reflect gradual appreciation over a period of years or excessive depreciation allowances in previous years.<sup>2</sup> Similarly, the distinction between recurring and nonrecurring items is less sharp than one might think at first. A flood or fire loss not covered by insurance is regarded as nonrecurring. Yet the prospect of such losses may continue to be a long-run hazard to earnings.

In recent years the danger that the unskillful reader might overlook or omit surplus items from his thinking has led to a "clean surplus" theory of statement construction, which would eliminate all gains and losses from the surplus category (making it "clean") thus insuring the use of a net income figure that would include every element of gain or loss.<sup>3</sup> Insofar as items relating to prior periods are concerned, this treatment makes certain that average earnings will be adequately inclusive even though the current year's figure may be less correct. With respect to the nonrecurring items, it makes necessary a double calculation of net income, one to exclude the extraordinary items as well as the final inclusive net income figure, unless that job is to be left to the reader.

In any case, the reader must be prepared to classify the facts to suit the purpose for which he is making his study. If he is attempting to judge probable earnings for the coming year, he is likely to dis-

<sup>2</sup> Some would even argue that gain or loss from fixed assets represent changes in the value of the permanent investment, or "principal," rather than "real income" and so should be shown in Capital Surplus instead of in Earned Surplus. This position could best be supported on economic grounds when it could be shown that the gain or loss has arisen from a change in the general price level and the proceeds from the sale of the fixed assets were just sufficient to maintain the purchasing power of the original investment. Because of the depreciation factor and the complex nature of most fixed property, such reasoning is difficult to support with evidence in practice.

<sup>3</sup> For a fuller statement of the clean surplus theory and the opposing current operating concept, see H. A. Finney and H. E. Miller, *Principles of Accounting, Intermediate* (New York: Prentice-Hall, Inc., 4th ed., 1951), pp. 111-113.

regard all unusual items as nonrecurring over the short term; if he is studying long-run earning power, he will eliminate only items so unusual as to be unlikely to recur over the long term. Thus, loss from decline in the value of inventory below cost and adjustments caused by errors in the statement of prior years' income would be eliminated in the first case but retained in the second. Profit or loss from the sale of major fixed assets would be eliminated in both instances.

**Surplus reconciliation.** In whatever form these irregular gains and losses are reported, they should be fully enough stated so that the reader can understand the causes of all significant changes in both earned and capital surplus. Formerly, the practice was not uncommon of making some of these changes in the surplus account during the year with no explanation in the annual report. The amounts reported as surplus in the initial and final balance sheets for the period consequently could not be "reconciled." Now a separate concluding section of the statement devoted to the Surplus changes, or a surplus reconciliation, is regarded as an essential feature.

**Importance of good construction.** The outlined construction for the statement of profit and loss is highly necessary for any satisfactory analysis. An improper and confusing mixture of items often exists in published statements. In other reports, the difficulty of insufficient detail is met. The executive familiar with his needs can demand the proper information. In the competition for the use of capital, the creditor and the investor have the means of requiring business to give adequate information. The Securities and Exchange Commission has been successful in compelling generally adequate reports where the securities have been issued subject to its regulation or are listed for trading on the exchanges. Such issues now constitute most of the corporate securities held in considerable amounts by the public.<sup>4</sup>

Granted that every effort should be made to maximize the utility of accounting data, it is worth emphasizing that no matter how the Statement of Profit and Loss and Earned Surplus is constructed, analysis will be required to interpret such figures. The accountant

<sup>4</sup> A colorful and popular statement of the former inadequacies of some corporation reports is to be found in W. Z. Ripley's *Main Street and Wall Street* (Boston: Little, Brown, 1927), particularly in Chapter VI, "Stop. Look. Listen!" For matters concerning which the Securities and Exchange Commission is critical in statements made to it, see its *Accounting Series Release No. 7* (1938).

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records the past; the reader is invariably looking forward and utilizing that record to make judgments about the future. Factors like changes in the character or volume of operations,, in the price level, in management, and in scores of other details are constantly tending to make the unfolding future unlike the past even in the regular and recurring elements of gain and loss.

## CHAPTER IV

### Analysis of Working Capital Condition

**Division of the balance sheet.** The balance sheet falls naturally into two divisions: the first has to do with the assets, which are constantly changing form, and the short-term liabilities; the second includes the more long-lived, or fixed, assets, the fixed liabilities, and the net worth. The first section might be termed the circulating capital section, because at one time the funds of the business are tied up in a stock of goods, later the goods are sold and there is an account receivable substituted, and then the account is turned into cash, at which time the cycle is ready to begin again. The assets engaged in this short operating cycle are known as current or "circulating" or "working" assets, even though in a few cases, such as the tobacco inventories of cigarette manufacturers and the aging liquor stocks of distillers, the cycle may require more than a year.<sup>1</sup> Current assets include all those assets that in the normal course of business return to the form of cash within a short period of time, ordinarily within less than a year, and such temporary investments as may be readily converted into cash upon need. The short-term, or current, liabilities on the opposing side of the balance sheet are closely related and include those debts that mature within a year.

**Working capital.** Working capital is the excess of current assets over current liabilities.<sup>2</sup> If the latter were larger than the former, the

<sup>1</sup> This "operating cycle" test is favored in Research Bulletin No. 30, "Current Assets and Current Liabilities--Working Capital" (New York: American Institute of Accountants, 1947), where it is recommended that installment accounts and notes receivable may be included as current assets, "if they conform to normal trade practices and terms within the business" and would permit the exclusion of a bonded debt falling due within less than a year if refunding is expected.

<sup>2</sup> Businessmen and economists may sometimes identify working capital with the current assets. For that reason some prefer the term "net working capital" or "net current assets." The definition used here is that most commonly used by accountants and in the world of finance. Jules I. Bogen, ed *Financial Handbook* (New York: Ronald Press Co., 3d ed., 1948), p. 709.

difference would be called a "working capital deficit." If working capital is insufficient, a time will come when some new funds from more permanent sources will have to be brought into the business to increase it or else much of the current assets would have to be liquidated to pay current debts.

When this condition threatens, through such causes as are discussed later in this chapter, the management will, if it is able and has sufficient foresight, acquire the needed fixed funds, that is, funds from owners or long-term creditors. Insolvency as the term is employed in equity courts, or technical insolvency, exists whenever the business is unable to meet its obligations as they fall due. Actual insolvency, or insolvency as the term is used in the Bankruptcy Act, exists only when the assets are actually insufficient to satisfy the liabilities in full.<sup>3</sup> Capital stock is not a liability, and so the presence of a profit and loss deficit, indicating that the capital has been impaired, does not constitute insolvency. Inasmuch as assets usually shrink very greatly in a forced liquidation, it is always possible that condition of merely technical insolvency may be the forerunner of actual insolvency.

No creditor wishes to invite the risks attendant upon liquidation, and so the working capital is of vital interest to him, particularly if it is within the class of current liability creditors. Current creditors expect payment from current assets, and consequently if the balance sheet is being examined by a banker, a merchant creditor, or any other grantor of short-term credit, this portion of the statement will be the center of attention.

**Fixed assets and liabilities.** The second division of the balance sheet, as stated, is made up of the fixed assets, the fixed liabilities, and the owners' interests. The last two items are sometimes called the "capital liabilities," although the latter is not an actual liability. They represent the sources of those assets that may be retained for a long term of years, or indefinitely. It is customary to classify a liability as fixed, instead of current, if it does not come due within a year.

This second section of the balance sheet is of concern to those whose interest in the enterprise, unlike that of the current creditors, is to be a continuing one. The chief of these are (1) investors, that is

<sup>3</sup> *Ibid.*, page 930.

the bondholders and stockholders; and (2) the management, which directs operations and makes financial policy.

The natural division of the balance sheet into two parts is shown in the chart given below. It is constructed on the assumption that the business is in the normal condition of having working capital: that is, an excess of current assets over current liabilities. Although it is improper to regard specific assets as the contribution of particular creditors, working capital is generally thought of as the portion of the current assets contributed by the investors.

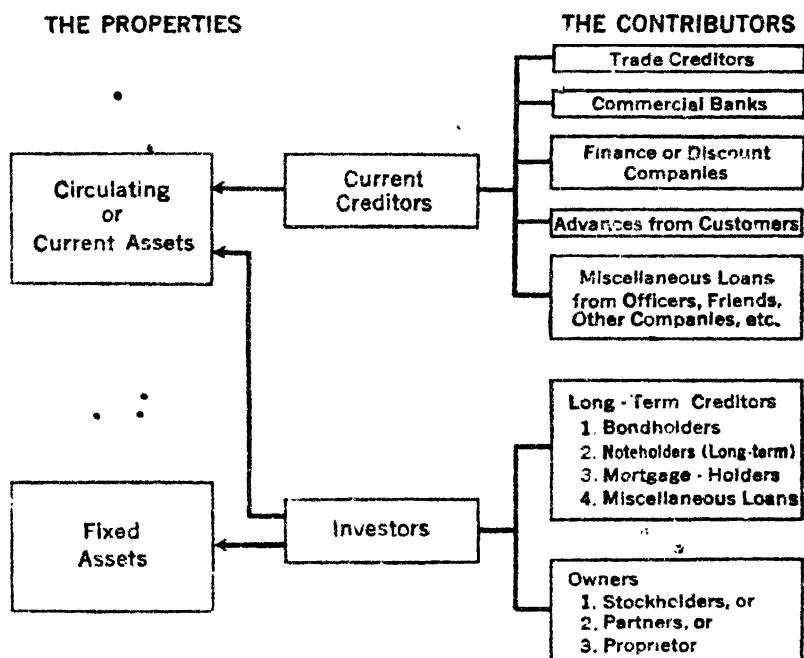


Fig. 1.—The Balance Sheet as a Chart, Showing the Division of Interests in the Properties.

**Balance sheet form.** Before studying the details of the balance sheet, it is desirable to picture it in a form that will aid in the analysis. A standard form cannot be said to exist, and the limitations of printing space in an annual report make the matter of proper form more difficult. The lack of standardization makes some regular outline useful to the analyst in rearranging items. Where, as for a railroad or a public utility, the problem of working capital is of

**AN OUTLINE FOR A CORPORATE BALANCE SHEET**

COMPANY

Balance Sheet, \_\_\_\_\_, 19\_\_\_\_

**Assets**

**Current Assets:**

Cash	\$	\$
Marketable Securities	\$	\$
* Accounts Receivable	\$	\$
* Notes Receivable	\$	\$
Total Receivables	\$	\$
Less Allowances for Bad Debts	\$	\$

**Inventories:**

Finished Goods	\$	\$
Partly Finished Goods	\$	\$
Raw Material	\$	\$
Miscellaneous Accounts and Notes Receivable (not from customers)	\$	\$

**Accrued Income**

**Other Current Assets**

**Total Current Assets**

**Deferred Charges**

**Fixed Operating Assets:**

Land	\$	\$
Buildings	\$	\$

**Liabilities and Net Worth**

**Current Liabilities:**

Accounts Payable	\$	\$
* Notes Payable	\$	\$
* Loans Payable	\$	\$
Dividends Payable	\$	\$
Accrued Expenses	\$	\$
Accrued Federal Income Taxes	\$	\$
Other Current Liabilities	\$	\$

**Deferred or Unearned Income**

**Fixed Liabilities:**

Funded Debt	\$	\$
Other Fixed Liabilities (e.g. Re- serve for Pensions or Accrued Pension Liability)	\$	\$
Total Fixed Liabilities	\$	\$

**Net Worth:**

Preferred Stock Issued	\$	\$
Less Treasury Stock	\$	\$

Machinery and Equipment	\$ _____	Common Stock Issued	\$ _____
Total	\$ _____	Less Treasury Stock	\$ _____
Less Accumulated Depreciation	\$ _____	Paid-in Surplus, or Capital con-	
Patterns, Dies, etc.	\$ _____	tributed in excess of par (or	
Total Fixed Operating Assets	\$ _____	stated) value	\$ _____
 Fixed Nonoperating Assets:			
Investments in Affiliated Companies	\$ _____	† Earnings Retained in Business:	
Other Stocks, Bonds, etc.	\$ _____	Appropriated: (as for)	
Due from Subsidiaries	\$ _____	Sinking Fund Re-	
Sinking Fund	\$ _____	serve	\$ _____
Other Fixed or Miscellaneous Assets	\$ _____	Contingency Re-	
Total Fixed Nonoperating Assets	\$ _____	serve	\$ _____
 Intangible Assets:			
Patents and Copyrights	\$ _____	For Improvements.	\$ _____
Organization Expenses	\$ _____	Unappropriated	\$ _____
Good Will and Other Intangible Assets	\$ _____	Total Net Worth	\$ _____
Total Intangible Assets	\$ _____	Total Liabilities and Net Worth	\$ _____
Total Assets	\$ _____		

The outline, although not all-inclusive, suggests an arrangement for the usual items appearing in published balance sheets. Where one is  
<sup>a</sup> position to request information, see the forms suggested for credit men (Chapter XI).

\* Receivables or other assets pledged to creditors should be so stated in the balance sheet or in a footnote. Noncurrent receivables should appear under fixed assets.

<sup>b</sup> Secured loans should be separately stated or indicated in a footnote. When balance sheet is for creditors, it should show to whom notes are payable, as banks, trade creditors, or others.

<sup>c</sup> A deficit in place of surplus would be stated preferably in this position as deduction, although it is sometimes shown on the asset side. Contingent liability for endorsements or other obligation may be stated in a footnote if not disclosed in the balance sheet.

## ANALYSIS OF WORKING CAPITAL CONDITION

secondary importance and the fixed properties and liabilities are the chief concern, the latter may be placed first. In most cases, however, the current items are of first interest and should be placed first, as in the outline shown on pages 66 and 67.

**Comparisons of working capital.** In the suggested form, the current assets are placed opposite the current liabilities, making comparison easy. Where the purpose is to trace the changes in working capital from time to time, however, the figures for the years in question might be arranged in vertical columns. This form is illustrated in the following comparison.

### WORKING CAPITAL COMPARISON OF GLENN L. MARTIN COMPANY

(thousands of dollars)

	1946	1948	1950*	1951*
<i>Current Assets:</i>				
Cash	10,186	4,738	4,282	10,657
U. S. Treasury tax notes	12,494	—	2,992	—
Accounts receivable - trade	5,336	6,384	2,488	6,455
Contract termination claims	2,818	180	—	—
Advances on purchase contracts	4,004	88	1,214	1,610
Contracts expenditures to be reimbursed	943	1,464	1,000	5,416
Inventories	50,230	12,306	18,969	31,400
Other current assets	300	1,963	469	—
Total current assets	<u>86,311</u>	<u>27,123</u>	<u>31,353</u>	<u>55,539</u>
<i>Current Liabilities:</i>				
Notes payable	11,000	4,755	—	20,972
Accounts payable	6,551	1,984	3,113	6,141
Advances received on contracts	17,224	22	10,013	17,899
Renegotiation refund due Government, etc.	2,480	5,065	4,349	3,338
Reserve for Federal income tax, etc.	2,264	578	437	1,622
Other current liabilities	4,307	5,018	2,491	4,706
Total current liabilities	<u>43,825</u>	<u>17,423</u>	<u>20,403</u>	<u>54,678</u>
<i>Working Capital:</i>	<u>42,485</u>	<u>9,700</u>	<u>10,950</u>	<u>861</u>
<i>Other related items:</i>				
Earned surplus . . . . .	40,025	3,282	9,245	12,033 (deficit)
Contingency reserve . . . . .	4,000	275	—	—
Long-term debt . . . . .	—	11,666	3,697	14,383

\* Company only.

Glenn L. Martin Company had been a successful and profitable producer of military aircraft even prior to World War II. After 1945, faced by the problem of readjustment to a shrunken market, it ventured into the field of civil aircraft, hoping to capitalize on the expected expansion in commercial transport. Its ensuing losses in 1947 and 1948 were huge, cutting the Earned Surplus and Contingency Reserve by \$40.5 million. This reduction represented a 70 per cent decrease in the \$57.5 million common stock equity at the end of 1946. A parallel shrinkage of \$32.7 million in working capital from \$42.5 to \$9.7 million took place. The introduction of a \$11.7 million long-term debt was made necessary chiefly by an increase in the net property account of \$8.0 million. If losses had not been so heavy, this expansion could have been cared for from working capital accumulated in earlier years.

In 1951, on the eve of another major expansion of military aircraft production, with a backlog of almost a half billion dollars in contracts, the company took another severe loss almost wholly attributable to commercial-type plane production. The net loss for the year totaled \$22.2 million after a tax credit of \$0.3 million and the common stock equity which had been \$57.5 million at the end of 1946 was reduced to a nominal \$0.6 million at the end of 1951. The nominal working capital of less than a million dollars meant financing was imperative if the company was to serve the defense effort. A plan was announced whereby banks, the Reconstruction Finance Corporation, and certain airline customers for the Martin 4-0-4 type plane would contribute funds.<sup>4</sup> Additional funds were contemplated from a sale of debentures and rights to existing stockholders. The possibility of salvaging going-concern values from revived operations ordinarily explain the ability of such major concerns to refinance rather than to liquidate. Many large industrial corporations were financially embarrassed in the crisis and deflation of 1930 that followed World War I. Such trouble was exceptional in the severe and prolonged depression that began in the early 1930's for large industrials, but brought heavy failures in the railroad and real estate fields. In spite of the readjustment problems of industry in the late 1940's immediately following the end of World War II, losses and financial difficulties such as Glenn L. Martin Company suffered were the exception.

<sup>4</sup> *Wall Street Journal*, March 5, 1952.

**Need of working capital.** Before passing to a discussion of the individual items in the working capital statement, it is well to point out the importance of adequate working capital.

Although the current liabilities are paid from cash generated by the current assets as a whole, the working capital should be sufficient in relation to the current debt to provide against danger from a shrinkage in the value of current assets, particularly inventory. During periods of boom, the current assets and liabilities are rapidly increased, so that the proportion is less favorable. The danger of overexpanding on inadequate working capital may be illustrated as follows:

	1950	1951
Current Assets	\$1,000,000	\$2,000,000
Current Liabilities	400,000	1,400,000
Working Capital	<u>\$ 600,000</u>	<u>\$ 600,000</u>

The additional purchases of merchandise in 1951 increased current assets and current liabilities \$1,000,000. The current ratio of 10 to 4 is reduced to 10 to 7 (20:14). If the current assets shrank in value one third in 1950, they would still have been more than the liabilities; but in 1951 the same proportionate loss of value in assets would have left the debts in excess.

	1950	1951
Current Assets	\$666,666	\$1,333,333
Current Liabilities	400,000	1,400,000
Working Capital	<u>\$266,666</u>	
Working Capital Deficit		<u>\$ 66,667</u>

It is a rule of finance that as the volume of business for a given concern increases the amount of working capital must be increased (provided it was not redundant in the beginning) in order that the current liabilities may be provided with a proper margin of safety.

Inflation is very likely to have the same effect as that of genuine growth or expansion as illustrated above. During a period of rising prices, "nominal" profits appear high even though "real" profits are low or lacking. The former exist whenever sales exceed costs and expenses in dollars, but the latter only when the concern has more purchasing power at the end of the fiscal period than at the beginning. Whenever business fails to collect enough to replace stocks at the higher level of prices because of rigid rules of mark-up or competitive conditions, current debt will have to be expanded to carry

even the same stock of goods at these higher prices. In the deflation between 1929 and 1932, large industrials frequently maintained cash and increased current ratios while commodity prices were falling rapidly and losses were being reported—a condition which might be expected as a logical converse of the illustration.<sup>5</sup> In the price inflation after World War II the reverse condition of declining current ratios while prices were rising, business volume growing, and profits even being made was the lot of many businesses.

**Bank credit.** The fact that commercial banks prefer to invest their demand deposits in temporary loans to business often leads to the practice of requesting the bank borrower to liquidate his indebtedness at least once each year. It is true that some firms have their paper outstanding the year round. One argument for this practice is that the business is constantly making purchases upon which it may take cash discounts that are greater than the discount paid the bank. If the bank credit were not used, the discount were lost, and the full period of mercantile credit were taken, a possible profit would be lost. Such a statement, however, is an admission that the management could employ additional permanent funds profitably. Usually, continuous bank borrowing is practiced by small and medium-sized rather than by large business units. Such concerns often have difficulty in raising permanent funds by the sale of stocks and bonds. Working capital is generally built up in such cases from retained earnings.

**Working capital inadequacy.** Inadequate working capital is frequently stated as the cause of financial embarrassment and failure. As an explanation the statement is superficial. The important question is why did the working capital become inadequate to maintain a sound and liquid current position. The possible causes of inadequate working capital in a going concern may be located by examining the earnings statement and comparing the consecutive balance sheets.

Some of these causes derive from unfortunate circumstances; and others, from bad financial management alone. A list of the causes of inadequate working capital would read:

1. The payment of unearned interest and dividends.
2. Operating losses.

<sup>5</sup> Harry G. Guthmann, "Industrial Working Capital During Business Recessions," *Harvard Business Review*, July, 1934, p. 472.

3. Extraordinary losses.
4. Current funds used to add to fixed assets.
5. Reduction of stocks and bonds.
6. An expanded volume of business and current assets that requires more working capital than is available.

1. *Unearned interest and dividends.* The payment of interest and dividends reduces working capital by taking cash while leaving the liabilities unchanged. Interest payments are necessary, of course, to prevent the business from being declared bankrupt; dividends, whether earned or not, are improper when they seriously impair the working capital position. The payment of dividends that are not being currently earned may arise from a desire to maintain a financial record, to hold trade prestige, or to make a good showing preparatory to selling stocks and bonds. In comparing dividends and earnings, some allowance should be made for the tendency to pay out dividends *after* they are earned, so that they lag after rather than exactly parallel the earnings. Management may also try to make dividends more stable than the fluctuating earnings. When working capital and previously accumulated surplus warrant, the maintenance of dividends will make for satisfied stockholders.<sup>6</sup>

When earnings are sufficient for dividends, trouble may nevertheless arise from the management's attempt to use the profits to acquire additional fixed assets and to pay dividends at the same time. The balance sheet as well as the earnings statement must be read in order to determine the propriety of a dividend declaration. To a wise director a strong working capital position is as much a prerequisite of a dividend declaration as is a surplus account in the balance sheet.

2. *Operating losses.* Operating losses may also drain the working capital. The sales of services or goods may not yield sufficient amounts to repay the cost of goods sold and the necessary selling and administrative expenses. The condition may be general because of business depression or a falling price level. Or, only individual companies may be hit at a time when other members of the industry are doing reasonably well. Operating losses may be caused by lack

<sup>6</sup> For an unusual example of dividend maintenance, the record of American Telephone and Telegraph Company may be studied for the decade of the 1930's and even afterward. The Company's \$9 dividend rate, inaugurated in 1922, was kept up without a break in spite of earnings below that figure in a number of years.

of knowledge on the part of the executive, traceable to insufficient or tardy accounting information. On the other hand, the operating loss may be a loss consciously borne throughout a period of stress for the purpose of continuing business and keeping the organization intact for a later period of profitable activity. The unrecognized losses that result from the accumulation of uncollectible accounts and unsalable merchandise will be taken up in the discussion of those accounts later in this chapter.

However, operating losses do not always drain off working capital. The depreciation of the equipment is included among the expenses of operation. This loss drains the fixed assets instead of the current assets. An analysis of earnings statements frequently shows an abnormal reduction in repairs and replacements during a period of depression. The depreciation may also be understated, thus reducing the reported loss.

*3. Extraordinary losses.* A complete list of possible extraordinary losses is of course impossible, but it would include any unusual loss that might effect a reduction of any of the current asset values or increase any current liability without effecting any correspondingly favorable change in the working capital. A most common loss arises from a falling off in the value of inventory resulting from sudden violent changes in market price. So impressive was the lesson of speculative inventory losses to even major companies in the price crash of 1920, that no comparable record of industrial fatalities is to be found in the more prolonged deflation of 1929-1933 or the lesser decline in 1951 after the post-Korean spurt in prices and inventory accumulation. Many companies now have a cushion in an inventory carried at LIFO value considerably below market value.<sup>7</sup> LIFO, or last-in-first-out, is a method of recording inventory values. Whenever raw materials are manufactured or finished goods are sold, they are assumed to be the last goods that came into the accounts. This practice leaves the inventory account showing the oldest goods received as the balance on hand. Such goods after a period of rising prices will be below current replacement cost. The effect of LIFO on analysis is discussed later.

<sup>7</sup> Some see additional protection in the price-support policies of the Federal government. That the problem continues to exist and requires a margin of financial strength is suggested by the post-World War II experience of companies like Proctor and Gamble Company and the meat packers

A defalcation or a burglary, if not covered by insurance, would produce the same result. The current obligations of a concern might suddenly be increased by an unfavorable court decision in a damage case or a patent infringement suit.

4. *Additions to fixed assets.* It not infrequently happens that an enterprise diverts cash to the fixed assets for additions or improvements. This is usually done during profitable periods, when it is vaguely expected that "profits" will pay for the work. If the profits are sufficient and the work not too extensive, the matter may take care of itself. Sometimes, however, the expenditures reduce the working capital to a dangerous extent, and trouble has frequently resulted, especially where the lack of current funds is not noted until a period of restricted credit and high interest rates has set in. An inexpedient issue of securities may then have to be sold in order to replenish the cash, or failing that, bankruptcy may ensue.

5. *Reduction of bonds or stocks.* As long as the retirement of bonds and stocks is voluntary, the management is not likely to drain working capital unduly for this purpose. Probably the two chief sources of trouble in this regard are (1) the failure of management to balance the drain of such security retirements by a retention of surplus and (2) excessive retirements during a period of depression when cash is temporarily idle as a result of low business activity. Difficulty may also follow when a rigid sinking fund requirement for a bond or preferred stock issue drains working capital more rapidly than it can be replenished by earnings. The working capital of an unincorporated business might be similarly drained by the purchase of the equity of a retired or deceased partner.

6. *Expansion of operations and current assets.* Some businesses are embarrassed by prosperity. They find their volume of sales has grown so rapidly that they have insufficient working capital for their purposes even though nothing is spent to increase fixed assets. (See the illustration on page 70 above.) An increased volume of business means that a larger stock of goods and larger amounts of customers' accounts must be carried. Up to a certain point, assistance may be had from the bank and those selling to the business. Soon, however, the point is reached where the more observing creditors note that the margin of working capital that protects them is too small in proportion to the current liabilities. However, if the condition is discovered at a time when it is possible to obtain more permanent capital with-

out embarrassment, the business may be saved from subsequent financial difficulties.

Of the six causes of inadequate working capital, the first five represent factors that act as a drain upon it; the last represents the failure of working capital to grow rapidly enough to keep the position sound. The first three causes will be reflected in the balance sheet by a decline in working capital that is balanced by a decline in the surplus. The profit and loss statement will have to be examined in order to determine which of the three are operative. The fourth and fifth causes are purely balance sheet changes, the drain on working capital being balanced by increased fixed assets or reduced bonds or stocks. In the case of the last cause, working capital may actually increase, but because of a more rapid rate of increase in the current debt, the situation becomes financially hazardous.

**Working capital analysis.** Inasmuch as inadequate working capital is the forerunner, if not the real cause, of financial disaster, the analyst will constantly watch the progress of this half of the balance sheet. Moreover, care must be exercised to detect any inadequacy, because reports are sometimes published in a misleading form. The first precaution necessary is to make sure that all items in the balance sheet relating to working capital are properly located. Sometimes assets that are not current are included under that heading, whereas current liabilities may not all be stated as such.

The second problem is one of scrutiny of the details with a view to detecting whether misstatements exist, and whether the various values are in a proper proportion one to another. These two problems are discussed together in the following material.

**Cash.** Cash, the common measure of value, is the form toward which most of the current assets are traveling. The customers' accounts are but one step removed from cash. The merchandise account, because it is usually converted first into accounts receivable, may be said to be two steps removed.

Cash may be shown under two headings: Cash on Hand, and Cash in Bank, especially by smaller concerns seeking bank or trade credit. This arrangement separates the part that may be verified most easily—Cash in Bank—from items that may be misrepresented and which, therefore, need careful analysis. Cash on hand has been distorted by the inexpert and the unscrupulous to mean a variety of items. It has

been stretched to include "I O U's" of employees, loans to officers, advances to salesmen, and similar noncash items. Where the Cash-on-Hand item is stated separately, it should be comparatively small; if it is not, the possibility of some such error as is here indicated should be considered. When the balance sheet has not been audited, a dishonest or an ignorant proprietor has been known to show his bank balance, without regard to his outstanding checks, as his cash in bank. Inasmuch as his accounts with creditors have been reduced on his books by these checks, he overstates both his net worth and his working capital. Another sharp practice, but one that should be detected by an auditor, is the occasional attempt to overstate cash in bank by depositing doubtful checks at the time of audit or statement-making. An auditor detects such items by checking up on any notes, checks, or other items in the course of collection at the bank.

Occasionally, cash in bank is not available for general purposes. It may be set apart for a specific purpose, as, for example, for a sinking fund. Such cash, in a properly prepared statement, will appear under a distinct caption, such as Sinking Fund. During the height of the period of bank failures between 1930 and 1933, cash in bank was not infrequently a frozen item. Good practice requires that any cash not freely available to pay current debts be stated separately.<sup>8</sup>

**Cash in foreign banks.** Where a business house does an international business, or where a financial institution has banking connections abroad, there are likely to be cash balances carried in foreign banks. The value of such balances varies with changes in the rate of exchange for the currency of the foreign country in question. Such variation in value will be equally true of obligations, such as accounts and notes payable, in foreign cities, unless the transaction is on a dollar basis. There are also restrictions upon the withdrawal of foreign cash to the United States, so that it is regarded as desir-

<sup>8</sup> Further information for the auditor with regard to the security of Cash and other balance sheet items may be found in works on auditing (for example, R. H. Montgomery, N. J. Lenhart, and A. R. Jennings, *Montgomery's Auditing* (New York: Ronald Press, 7th ed., 1949), Chap. VIII. However, a credit man who analyzes statements is not an auditor, and so only such information is included here as is likely to be of value to the former. The statement analyst must depend upon the figures presented him and upon such questions as he may be permitted to ask. He rarely has access to the books of the business, and a description of the methods of the auditor in discovering errors and misstatements would consequently be out of place in this discussion.

able that balances abroad should not exceed actual needs for foreign payments. The danger of loss of assets in belligerent countries requires no comment.<sup>9</sup>

Any such foreign bank balances or receivables should be separately stated in the balance sheet. Where the presence of such an item is known or suspected, a bank credit man should demand detailed information. The fact that failures are due to this cause indicates the serious need for such close investigation.

**The place of cash in working capital.** There have been attempts to lay down some rule as to the proper proportion between Cash and the other accounts that make up working capital; but no rigid rule seems practicable. The part cash plays in the working capital will, and should, vary with the nature of the business and the season. Cash is essential only insofar as current expenses are incurred and current liabilities mature. Ample working capital will normally provide a basis for securing cash from the banker for both purposes. It is only when some question arises as to the liquidity of the other current assets, when doubt is raised as to the profitability of the business or when a concern runs upon a period of restricted bank credit that limited cash becomes hazardous.

There is, then, no fixed proportion between Cash and the other accounts. Many commercial banks, however, require that their borrowers keep balances that will average from 20 to 25 per cent of their bank loans. The objection is raised by some businessmen that this rule necessitates excessive borrowing. A firm needing \$3,000 would have to borrow and pay interest on \$4,000 in order to maintain a 25 per cent balance. In effect, the interest charge is raised by  $33\frac{1}{3}$  per cent. A nominal rate of discount of 6 per cent becomes 8 per cent for the amount actually used.

<sup>9</sup> S. S. White Dental Manufacturing Company (1951) summarizes in a footnote to the financial statements the amount of foreign net assets, giving working capital and plant plus other assets as located respectively in Great Britain, Central and South America, Canada, and all other countries. It is stated that transactions involving foreign exchange are generally subject to foreign government controls.

Warner Bros. Pictures, Inc., follows the more common practice of not combining foreign with domestic assets in its balance sheet but showing a separate item for Investment in and Advances to subsidiaries operating in foreign territories, less reserves, at \$2,944,674 in 1951. A footnote stated that this represented net assets of \$12,285,000 and indicated its distribution among the British Isles, Canada, and other countries.

This objection may be valid in some cases. It overlooks, however, the fact that ordinary prudence requires the keeping of a balance for running expenses and for protection against those emergencies that are likely to arise in business. Moreover, the banker has a right to expect his customers to keep some balance to repay him for the expense of handling their accounts. If, however, the bank does not base the balance requirement upon these two factors, the practice becomes a mere device for raising the rate of discount by indirection.

A business should, in general, keep cash balances (1) that will be sufficient in relation to other current assets and the current liabilities to avoid unfavorable comparisons with similar businesses by creditors, (2) that will support a satisfactory line of credit with the commercial bank, if that is desirable, and (3) that will be enough to prevent trouble in meeting bills and expenses as they mature. Ordinarily, the last consideration would favor mercantile and manufacturing concerns mean maintaining cash equal to the operating expenses or cost outlays for thirty days to enjoy financial comfort. Actually, many small businesses live on a hand-to-mouth basis and would feel happy to enjoy balances one half of this rough standard.

**Accounts receivable.** The accounts receivable should represent the amounts owing from customers for the sale of goods or services. Because it has sometimes been used to include any amount owing to the business, occasional attempts have been made to use a more definite title, such as "Trade Debtors." The statement form of the National Association of Credit Men uses the caption "Accounts Owing from Customers Collectible."

Such a title excludes advances to salesmen, loans to officers, and the like. Accounts with subsidiary or allied companies, where the balances are likely to represent a more or less permanent advance, should be placed under the fixed assets. In any case, it would be bad practice not to state such balances separately. Goods transferred to branches of the organization should not be regarded as a charge to be shown as accounts receivable. Similarly, goods sent out on consignment constitute unsold inventory, not accounts receivable.<sup>10</sup> The goods, until sold, are a part of the inventory.

<sup>10</sup> In the spectacular failure of the corporation making the superselling patent medicine, Hadacol, a secured creditor alleged that in attempting to collect assigned accounts receivable it found that "... in many cases merchandise had been delivered on consignment." *Wall Street Journal*, October 4, 1951.

**Pledged assets.** Whenever accounts receivable, or, for that matter, other assets, have been pledged in order to secure credit, they should be shown under a separate title or otherwise clearly shown in the balance sheet. Such assets are subject to the prior claims of the secured creditor or creditors who hold the assignment or other evidence of pledge. Almost any of the assets may be pledged. Accounts or notes receivable or some kinds of merchandise may be pledged to secure loans. Equipment is sometimes pledged to the vendor to secure the payment for the same. Securities, if available, are frequently used as collateral security at banks.<sup>11</sup>

The circumstances under which such pledges arise are various, and so will be discussed later, and more appropriately, in relation to the various liabilities for which such security may be given. Inasmuch as the hypothecation of receivables is important to creditors and is sometimes not mentioned in a poorly prepared balance sheet, a method of checking up on this point will be touched upon in Chapter XI.

**Notes receivable.** The same analysis described for the accounts receivable is desirable for notes receivable, or, as they are sometimes called, bills receivable. The note, because it is an instrument signed by the debtor, may or may not be paid more promptly than the open book account. The terms are unmistakable and a note lends itself more readily to the legal requirements necessary to collection by law. All bills of exchange or drafts that have been accepted are regarded as notes receivable.

It is very important to learn whether these notes were given at the time of the sale or after the account had become due. If the latter is the case, the notes represent extensions of the original credit period and are clearly an inferior asset. They are overdue accounts. Familiarity with trade practice will often indicate whether notes receivable are to be expected in the balance sheet or not. When their use is unusual, it is frequently assumed by the reader that they represent a less desirable asset, representing either overdue accounts converted into notes, or special credits outside of regular trade, such as notes

<sup>11</sup> The possible importance of a pledge may be seen in the statement of Warner Bros. Pictures, Inc. (1940) that to secure serial bank loans amounting to \$4,000,000 the Company had pledged stockholdings in a subsidiary, which represented net assets included in the consolidated balance sheet of approximately \$42,700,000. The lien was of distinct importance to the Debenture bondholders and other unsecured creditors.

from officers or employees, and so of doubtful maturity and liquidity.

Certain wholesale lines customarily take notes. Examples of these are the fur and jewelry trades. In general, the use of the promissory note is limited in this country to lines dealing in commodities of large unit value, or lines that grant a long term of credit. In the statement of such a business the accounts receivable, if present, would be fairly small.

**Trade acceptances.** In the early years of the Federal Reserve system, merchants were urged to shift from the open account to the trade acceptance for trade credit purposes. These written evidences of trade debt have two distinctive characteristics: (1) they are time drafts drawn on the customer and accepted at the time that the sale is made, whereas a note may be given at any time; and (2) they cannot be used in transactions other than the sale of merchandise and properly be called trade acceptances. Recognition of these characteristics can be shown by a written or printed statement on the face of the trade acceptance.<sup>12</sup>

The trade acceptance, it was hoped, would give the creditor a more precise claim and one more readily negotiable at his bank. Banks were to enjoy the benefit of holding the security of the current asset closest to cash instead of a general unsecured note of the borrower. Customers resisted the change. The open account gave flexibility in obtaining adjustments or making returns. The element of compulsion in a note with a fixed maturity was disliked. So, in spite of various possible advantages, the trade acceptance made little progress. Where used, it may appear as Notes Receivable.

**Selling receivables; factoring.** When a receivable is sold outright to a finance company so that the latter has no recourse to the seller and bears the credit risk, the procedure is called factoring. Because

<sup>12</sup> In the Uniform Negotiable Instruments law a draft or bill of exchange is defined as an unconditional order in writing, other than that of a banker, signed by the person giving it, requiring the person to whom it is addressed to pay, in the United States, at a fixed or determinable future time, a sum certain in dollars to the order of a specified person.

The standard form of trade acceptance recommended by the former American Trade Acceptance Council is the customary draft form with the following statement printed below the body and above the signature of the drawer: "The obligation of the acceptor hereof arises out of the purchase of goods from the drawer, maturity being in conformity with original terms of purchase. The drawee may accept this bill payable at any bank, trust company, or banker's office in the United States which he may designate."

of the growing complexity of credit arrangements, an analysis is frequently necessary to determine whether a given concern is factoring or merely making a loan secured by receivables and continuing to bear the credit risk. Even in factoring, the purchaser may retain a portion of the sum he owes for the receivables bought on the principle that some reduction may occur, as through returns and allowances. Such adjustments can occur even in the case of cash sales that are apparently closed transactions.

But a sale of receivables may be accompanied by a repurchase agreement under which the vendor undertakes to make good on any credit loss and even to undertake all collections. Although a "sale" and to that extent legally like factoring, such an arrangement must be analyzed as like a pledge of receivables for a loan.<sup>13</sup>

**Quick assets versus inventories:** Some persons in analyzing the short-term credit position of a business like to make a sharp distinction between the assets discussed thus far and the inventories. The former, consisting of cash and equivalent and the receivables, are sometimes called the *quick assets*. Two differences between them and the inventories are that (1) the former are claims to dollars rather than to goods and are therefore "fixed value" assets, and (2) they are one step nearer to cash. Inventories are subject to changes in

<sup>13</sup> Thus, Western Auto Supply Company in its 43d annual report shows:

	December 31	
	1951	1930
Retail customers' accounts—mainly installment accounts due within one year	\$18,683,528	\$23,602,890
Less—Accounts sold to banks less company's equity therein, \$1,843,366) (Note 1)	11,724,496	12,075,159
	\$ 6,929,032	\$11,527,731

"Note 1. Customers' installment accounts have been sold to banks subject to terms of a purchase agreement under which the company assumes certain obligations under specified conditions. It is believed that the actual liability thereunder is reasonably covered by the allowance of \$659,303 against installment accounts included in the allowance for doubtful accounts and collection expenses."

Commercial banks became interested in loans secured by accounts receivables during the late 1930's when lending opportunities were scarce. They still prefer unsecured loans and the security of notes, such as are common in the field of installment paper, rather than of accounts receivable. Accounts receivable loans and factoring are largely the business of specialized finance companies. H. G. Guthmann and H. E. Dougall, *Corporate Financial Policy* (New York: Prentice-Hall, Inc., 2nd ed., 1948), pp. 421-430.

market value and must be sold before they become available for debt-paying purposes.

A banker who liked to emphasize this distinction might wish to see the working capital portion of the balance sheet stated as follows:

*Quick Assets:*

Cash on Hand	\$ 263
Cash in Bank	1,260
Accounts Receivable	11,982
Notes Receivable	832
Total Quick Assets	<u>\$14,337</u>

*Inventories:*

Finished Goods	\$ 3,944
Work in Process	2,860
Raw Material	6,715
Supplies	1,630
Total Inventories	<u>15,149</u>
Total Current Assets	<u>\$29,486</u>

*Current Liabilities:*

Accounts Payable	\$10,751
Accrued Expenses	368
Total Current Liabilities	<u>\$11,119</u>

In the above case, the prospective borrower, having made recent purchases of raw material, is desirous of securing a loan to pay off his accounts payable in order to take advantage of certain cash discounts. The banker will be inclined to look with favor upon such a loan where the total amount of current debt after the loan will not exceed the quick assets. The fixed-value current assets will thus cover the fixed-value current debt. The hazards of the merchandise markets in some lines of business may make such a high standard for bank credit reasonable. It is not, however, to be regarded as a general rule that is always followed, because there are some staple commodities that are more readily convertible into cash than are receivables. Nor will the use of such a rule-of-thumb automatically insure sound loans. The borrower may divert the cash receipts from such quick assets to purposes other than current debt liquidation or the extra materials purchased might become the basis for a permanently expanded volume of operations rather than a seasonal or temporary expansion.

**Merchandise inventory.** Under the head "Merchandise Inventory" may be considered the inventory of the trader who does not

manufacture.<sup>14</sup> In studying the value of the merchandise, three questions arise:

1. How were the quantities of stock arrived at?
2. What was the method of valuing it?
3. What is the probable salability of the goods?

The amount of stock should be arrived at by a careful physical count at the end of each accounting period; that is, by inventorying. Sometimes the figure is arrived at by small concerns by estimating. Or, a continuous record of incoming and outgoing stock may be kept, so as to provide a perpetual inventory. Inasmuch as there is but a very slight chance that a counted or perpetual inventory will come out in even thousands or hundreds of dollars, the use of estimates may usually be detected by the presence of round figures in the balance sheet. Another danger is that consigned goods will be improperly included, although such goods are the property of the consignor.

It has become the general rule to use the lower of cost or market value on the date of the balance sheet. The term "market" means current replacement value either by purchase or reproduction as the case may be. The basis of valuation should be learned, and to aid the reader it should be stated in the balance sheet itself. A special situation arises where inventory is shown at substantially below its current value because of the use of the LIFO (last-in-first-out) basis of determining "cost." This problem as it affects credit analysis is discussed in the next chapter.

Where goods have been received in exchange for merchandise, the valuation should be carefully scrutinized. The automobile sales agency may be used as an example. The proper basis for valuation of second-hand cars in this case would not be the amount allowed for them, nor the amount for which they would sell, but the latter amount less a reasonable percentage for necessary selling and administrative expense as well as a reasonable profit, unless, by chance, that figure was more than cost, in which case cost would be used.

The matter of salability is important, in that it is only upon conversion that goods become available for debt-paying purposes. The goods may be without a market. Staple articles are least likely to

<sup>14</sup> A fuller statement of principles and precautions for Inventory Pricing is given in Research Bulletin No. 29 (1947) of the American Institute of Accountants.

lose their market, although even with them the price may drop to a ruinous point. In some lines of business, such as millinery or women's clothing, changes in style may render an overgrown inventory valueless. If a business is suffering from decay, the goods may be shop-worn. These are possibilities to be considered in the light of internal analysis and business experience.<sup>15</sup>

**Finished goods inventory.** The valuation of finished goods is not unlike that of ordinary purchased merchandise. The chief difference lies in the fact that its valuation, if it is to be more than a guess, is dependent on the cost accounting.<sup>16</sup> In the absence of such accounts, the door is left open to inflation on the one hand, and to ultraconservative understatement on the other.

Although undervaluation of inventory is not usual, it is reported that some of the more conservative textile mills follow a regular practice of carrying their inventory at about one half its actual purchase price. Although creditors are protected rather than harmed by such accounting, it is to be condemned. It is deceptive to stockholders, and would, if at all general, greatly hinder all attempts at genuine analysis. Statements must be as accurate as possible if they are to be satisfactory as information.

There is a temptation for the manufacturer—not presented to the trader—to increase unduly the stock on hand. It is natural to desire a continuance of manufacturing operations, not only to avoid the losses of idleness, but also to keep the labor force intact. Unit costs are kept low by regular operation. This tendency is likely to increase liabilities through the purchase of materials required in manufacture and to reduce the cash resources to a dangerously low point. Therefore, the question is raised as to what constitutes overstocking. It is ordinarily unwise to acquire a stock in excess of what can be sold within the period that it normally takes to turn over stock, a point discussed in the next chapter.

<sup>15</sup> Internal check, which is based upon a study of turnover, is discussed in the following chapter.

<sup>16</sup> The difficulties of allocating costs are a dominant reason for the meat packers' use of selling price less an allowance for selling expenses in valuing inventories. The reasons for the method suggested by D. Hummelblau are (a) it is easy to ascertain and apply to inventory scattered over a large number of points, (b) cost is not known in many cases, and (c) inventory is disposed of in a short time and hence is regarded as sold for all practical purposes. (*Investigations for Financing*, New York: Ronald Press, 3d ed., 1947, Lecture 4, p. 73.)

The following statement of working capital for a furniture manufacturer, the Bergstrom Furniture Company, shows the position of a growing concern with its inventories stated in detail and apart from the other current assets.

## BERGSTROM FURNITURE COMPANY, INC.

## STATEMENT OF WORKING CAPITAL

As of December 31, 1951

<i>Current Assets</i>		<i>Current Liabilities</i>	
Cash . . . . .	\$ 11,127	Accounts Payable . . . . .	\$207,342
Accounts Receivable (allowance made for bad debts and discounts) . . . . .	369,243	Notes Payable . . . . .	95,234
Notes Receivable . . . . .	78,629	Accrued Expenses . . . . .	19,420
 Inventories . . . . .			
Finished Stock . . . . .	83,242		
Work in Process . . . . .	19,352		
Raw Materials . . . . .	31,462		
Total . . . . .	<u>\$593,055</u>	Total . . . . .	<u>\$321,996</u>
Working Capital . . . . .			<u>\$271,059</u>

In the above case, the inventories are of less importance than the receivables—which is most likely to be true in a seasonal business just after the selling season is over and before the accounts are collected. Sometimes unusually long credit terms, as in installment selling, result in a high proportion of receivables to other current assets. Although the current assets are not twice the current liabilities, the cash and receivables are nevertheless so large a part of the total current assets that they alone are in excess of the current liabilities. Because of the none too high ratio of current assets to current debt, the quality of the former is a matter of concern to the creditors. With so much tied up in the item of receivables, their quality or collectibility becomes a point of central interest. The method of checking on this and other points is considered in the following chapter.

**Partly finished goods.** The partly finished product, or work in process, represents the value of raw material plus the labor applied to it and a proper proportion of the indirect expenses of production, such as the depreciation of machinery, power, heat, light, and similar items. The amount of indirect expense, overhead, or burden included in the value of this inventory represents, in the majority of instances, a more or less expert estimate. It should, however, be obtained through the use of cost accounts whenever practicable. Such accounts

serve to show the cost of the product at the various stages of its production and, where there is the production of more than one type of commodity, to distribute the costs scientifically among the different products.

The increased interest of businessmen in this special branch of accounting has been reflected in the growth of the National Association of Cost Accountants. There is a marked tendency to standardize the methods of cost accounting within the different industries. Standardization is valuable to the analyst because it assures him as to the comparability of statements to be used for determining the relative efficiency of competing units and discovering the reasons for differences in production costs.

Partly because of the doubtful correctness of the unfinished goods valuation, and partly because it has little value in a liquidation, the item is heavily discounted in the analysis of bankers and credit men. Unfinished goods in, for example, the clothing trades usually have little value except as scrap. But when a liquidation basis of values is to be taken, nearly all inventories need to be heavily discounted. A forced sale invariably results in sacrifices of values. Even accounts receivable are hard to collect in receivership. The balance sheet, however, is intended to reflect going-concern and not liquidation values.

The heavy loss in inventory values in bankruptcy cases led mercantile credit men to establish co-operative adjustment bureaus for the more efficient handling of embarrassed debtors.<sup>17</sup> The adjustment bureau acts in the capacity of a committee of creditors. Inasmuch as the bureau devotes its whole attention to the work of handling embarrassed debtors and represents a number of creditors as a unit, it is much more efficient than any creditors' committee would be. Where conditions warrant, the debtor is permitted to continue in business—a solution more likely to result in satisfaction to creditors than a resort to bankruptcy. Where it is necessary to wind up the affairs of the debtor, the bureau conserves the assets, securing a much better price than could be expected from the customary unsystematic sale. When it appears profitable, a bureau might even have any partly finished goods completed before it liquidated a business.

**Raw material inventory.** Raw material will be put to the same general test of value as that given above for the inventory of a mer-

<sup>17</sup> See R. P. Ettinger and D. E. Golieb, *Credit and Collections* (New York: Prentice-Hall, Inc., 3d ed., 1949), p. 301.

chant. It often consists of staple commodities possessing a wider market than the more specialized finished goods. The balance sheet is, however, the picture of a moment, and if the business becomes embarrassed at a later date, the raw material by that time may have been converted.

The size of the raw material inventory should be studied. Normally, it should be reasonably small, in order not to tie up an unduly large amount of capital. Where an impending scarcity threatens to halt operations, however, wisdom dictates the purchase of adequate supplies. This practice constitutes speculation, in the better sense of the word—a policy which should be pursued only with caution. Large purchases are particularly to be avoided after a period of rising prices. At such times the scarcity is exaggerated by the hysterical buying of ill-informed buyers. Purchasing policy should depend upon the underlying conditions at the time but, in general, creditors and investors favor a nonspeculative policy that minimizes the investment in inventories.

**Supplies inventory.** The location of the supplies inventory in the balance sheet varies. When it consists of such things as stationery and office supplies, it is likely to be grouped with the prepaid expenses and may be placed outside the current asset group. Factory supplies, however, are heading in the direction of manufacturing costs and so towards inventory. They are likely to appear under the Inventory group. Occasionally, as in some factories, supplies are important items, and in liquidation are as marketable as a raw materials inventory.

**Advances on contracts.** Advances or deposits are sometimes made on contracts for special goods. Such advances to suppliers of merchandise are sometimes improperly placed with accounts receivable. They are decidedly different, however, from accounts receivable. The former are prepayments for merchandise to be delivered, and the latter are claims to cash for goods sold to others. The advance indicates an approaching addition to merchandise and probably to accounts payable. If the prices are declining, this item points to a commitment likely to result in loss. It must be thought of as being a step further from cash than merchandise is.

**Investments.** Whether investments are a current or a fixed asset depends upon the policy and the intention of the management. If the investments are held for the purpose of controlling other enterprises,

or are intended as permanent investments, or are not readily marketable, they should not be classed as current. Securities may be purchased, however, with the idea that they are to be sold or used as collateral for loans in case of need.

Unfortunately, such securities are likely to be purchased in good times when they are high-priced, and the cash thus tied up is often needed when security values are low. It is for this reason that securities, even of the best grade, are not regarded as a wholly satisfactory cash resource unless they mature within a short time. The short-term obligations of the United States Government which are either redeemable at fixed prices on demand or whose short maturity limits price fluctuations are favored as temporary business investments.

When carried as current assets, temporary investments are expected to follow the rule of the lower-of-cost-or-market, unless the market depreciation is so small as to be immaterial. Market is frequently shown parenthetically in the balance sheet where the asset value is at cost.

**Deferred charges.** Deferred charges, sometimes called *deferred assets* or *deferred expenses*, are usually stated separately from current assets. Very different sorts of items are included under this heading. When they consist of prepaid expenses, it could be argued that they should be included among current assets in computing working capital for a long-term analysis. Such treatment would be justified on the ground that prepaid expenses of a short-run nature, such as prepaid rent or insurance, relieve the cash of just that much of a drain that it would otherwise bear during the following period. Exclusion is common, however. The common separation of even prepaid expenses from current assets probably reflects the historical influence of creditors upon balance sheet form. The argument is that such deferred items can seldom be converted into cash to pay debts in case of trouble. It is an example of a liquidating rather than the conventional going-concern approach. Other deferred items may represent long-term items or charges that are spread over the future merely as a matter of expediency. Value may have been parted with and the benefit to future periods doubtful.<sup>18</sup>

<sup>18</sup> In 1949, General Cable Corporation reported the payment of \$2,013,000 in that year to cover *past* service pension accruals in connection with setting up a new system. Of this amount, only the 10 per cent that was tax deductible for that year was included in expenses, and the balance of \$1,812,000 was included among Prepaid Expenses and Deferred Charges.

Two common deferred charges, unlike the prepaid expenses, are organization expense and discount on bonds issued. The costs of organizing a corporation are met before any profits are available to offset them, and so they are shown for a period as assets to prevent a deficit from appearing in the balance sheet. It is not regarded as conservative to carry organization expense as an asset beyond the first few years of a corporation's career.<sup>19</sup>

Corporations frequently sell their bonds for less than par value, that is, at a discount. When the bonds mature, however, the full face value must be paid to the bondholder. The discount plus the interest payments constitute the cost of borrowing. It would be clearly unfair to regard the discount as a loss for the year in which the bonds are sold. At the time when the bonds are introduced at par as a liability, the discount appears as a deferred charge among the assets to be gradually written off over the life of the bond issue.

The investor, then, might wish to analyze the deferred items before classifying them and include prepaid expenses among the current assets. The common practice, however, is to treat all deferred items as belonging under a special assets classification. It is almost always a minor item, and its classification would in any case have little effect upon the commonly studied balance sheet relationships.

<sup>19</sup> Although this is the conventional attitude, the author believes that organization expense is better classified as an intangible asset. Like good will, it represents an expenditure for an intangible that is necessary to the acquisition of a *going* business, and its elimination is to be regarded as a matter of expedient conservatism rather than of principle. Under the Federal income tax regulations, it has to be treated in the manner suggested. It cannot be deducted as an expense in the calculation of net income subject to the tax. Under the Federal excess profits tax, concerns find the retention of Organization Expense as an asset desirable in order to increase their "invested capital," just as the presence of other permitted intangible assets upon their books is helpful.

## CHAPTER V

### Analysis of Working Capital Condition (Continued)

**Current liabilities.** The current liabilities represent the claims that will have to be liquidated within a short time. The short term implies that the credit is needed only briefly. When a businessman buys machinery or adds to his fixed assets by incurring current liabilities, he may be accumulating trouble as well as liabilities. A machine, unlike a bill of goods, cannot be converted readily into cash. Unless the working capital was more than adequate before the purchase, such assets should be acquired by more permanent financing.

Even a bill of goods may not provide the means of meeting the liability thus brought into the balance sheet. The time required to realize on the goods may be greater than the credit period, or the price of the goods may fall, or the market itself may disappear, possibilities that explain why the banker, in most cases, lays less emphasis on the inventories than on the quick assets; that is, cash and equivalent plus receivables. The latter do not depend upon the sales organization for their cash quality.

Although values may shrink or disappear on the asset side, it has been said that the liabilities are never overstated, and it is true that overstatement of the liabilities is exceptional. Occasionally in recent years a corporation has overestimated its liability for Federal income taxes. In cases of uncertainty the practice has the virtue of conservatism and results in so much hidden working capital.<sup>1</sup>

<sup>1</sup> F. H. Hurdman described another case of overstated liabilities as follows: "One concern I know made a practice of entering foreign purchases at the normal rate of exchange with a corresponding amount in liabilities. At the end of the fiscal period those goods unsold were valued on the basis of the prevailing rate of exchange, but the liability was not correspondingly reduced. The result was an overstatement of liabilities." (Paper on "Analysis of Financial Statements" read before Robert Morris Associates at Richmond, Va., November 24, 1922.)

**Checking the current debts.** In a balance sheet prepared by a qualified public accountant, the reader will expect to find the current liabilities fully stated and properly classified. The figures of small concerns submitted by the owners may require checking for omissions or improper classification.

Sometimes a fixed debt has serial maturities or installments due within one year. These are current debt. They are paid from the current flow of funds. When a maturing bond issue or mortgage is reasonably certain to be refinanced, it is excluded. Until a definite arrangement has been concluded, however, such a liability comes at least potentially within the current class, and may so reduce or eliminate the working capital as to endanger the solvency of the enterprise.<sup>2</sup> It may be noted in passing that usually, though not invariably, mortgages and bonds become payable at once if their interest is not paid. Bank overdrafts are sometimes placed among the current assets in red ink or in italics, to be treated as deductions. Their proper place, however, is among the current liabilities.

- Omissions, when they exist, are a more dangerous factor than misplaced items. An unscrupulous merchant might include, as inventory, goods that are not paid for but the liability for which has not yet been entered on the books. Such a possibility makes honesty a prime requirement in credit matters. Expenses, such as accrued taxes, may be omitted through a lack of accounting knowledge. Sometimes, because of the tardy enactment of Federal income and excess profits tax legislation or because of the uncertain application of some law, the proper tax liability can only be estimated. When tax rates are high, as in recent years, the possible error may be substantial. A special problem exists for the unincorporated business, where the income tax liability is that of the owner rather than the business unit. Nevertheless any unpaid liability of the owner may prove a drain on the working capital of the business. It might be added that this may be true for other debts of the owners as well.

Moreover, there may be impending current liabilities. An adverse court decision may be pending. Goods may have been contracted for,

<sup>2</sup> Under the uniform classification of accounts prescribed by the Interstate Commerce Commission, however, funded debt is not treated as a current liability unless due and unpaid. For the analyst, such exclusion would often be useful elsewhere, as in the case of real estate companies, where principal payments on long-term debt are to be paid from future receipts rather than current assets.

and the contracts may become a burdensome obligation in a falling market. Contracts for raw material or merchandise, especially when for more than ordinary amounts and when made in a boom period, may create heavy losses in the succeeding business recession. Again, contracts may have been made to deliver goods or render services for some time in the future, contracts that would be unprofitable in a rising market.

**Secured creditors.** Ordinarily all creditors, except those few given priority by law, expect in case of liquidation to share in the assets in proportion to their claims. If there is any loss to creditors, it will be distributed *pro rata*. Where some of the creditors are secured by a pledge of a part of the assets, the risk of the others is correspondingly increased; for this reason a correctly stated balance sheet should show separately which creditors, if any, are secured and also which assets are pledged.

Inasmuch as liens on any of the assets weaken the position of the general creditors, the giving of such pledges impairs the credit standing of a concern to that extent. Strong concerns, as a consequence, avoid liens to current creditors if possible. On some occasions, custom dictates the giving of a lien. When this is true, allowance should be made accordingly. Bank credit demands special concessions. It may be the part of wisdom, where a concern possesses inventory that has exceptional value as collateral or desirable installment notes from customers, to pledge them for a bank loan. A well-secured loan might easily lead to a lower rate of discount or might be the only means of borrowing for the particular concern.

**Accounts payable.** "Accounts Payable" is generally the first item in the list of current liabilities. In a mercantile or manufacturing enterprise, the item should represent amounts owing to trade creditors. Just as the size of the accounts receivable indicates the rapidity of customers' payments, so the size of the accounts payable shows the rate at which the concern is paying its own bills. If the customary credit term is thirty days, then the accounts payable should not exceed one twelfth of the annual purchases, except in the case of the business that purchases seasonally and so has a very heavy indebtedness at certain times of the year and a very small indebtedness at other times.

In most lines it is advantageous to pay on practically a cash basis. Not only are discounts given for cash, but prices may be shaded for

a cash customer. For this reason, notes payable to banks are usually more economical than an equal amount of accounts payable, except when the latter are small. Thus, if cash discounts are allowed for payment within ten days, then accounts owing for less than ten days' purchases would indicate operations on what is called a "cash basis" in trade credit circles.

**Notes payable.** Notes payable, which are also known as *bills payable*, may be given to merchandise creditors, to banks, or to other parties, or sold for cash through commercial paper houses. Where the notes are given to creditors for merchandise, it should be ascertained whether they are given in accordance with trade custom or to settle overdue accounts payable. Where the notes payable are mingled without distinction, a figure ending in round numbers would usually indicate that they were notes given to banks or sold through dealers in commercial paper. Notes of this kind indicate, on the whole, that the enterprise has fulfilled a higher set of credit requirements than has the concern that has been able to obtain only mercantile credit. The analyst, however, should not be biased in favor of concerns enjoying bank credit, because even banks may make injudicious loans; he should form his judgment independently.

Where the notes have been given to others outside regular business channels, there is a question as to the financial condition. It is not customary to borrow from friends, relatives, or officers except when a business is in financial difficulty and unable to finance in the usual way. There is an implication that credit from these persons is on a personal rather than a business basis. Where a personal interest is involved, there is the danger that such a liability may receive special consideration. If a storm breaks, these loans may be paid off before bankruptcy proceedings are started. Liens on the assets are sometimes given to these persons and the transaction is not properly described in the financial statement.

**Loans payable.** Loans payable are sometimes distinguished from notes payable. The difference, if any exists, might lie in the absence of a written instrument such as a promissory note. The loan might be recorded only upon the books of parties concerned. The Loans Payable item may represent miscellaneous borrowings of the character indicated above, which should come under Notes Payable to Others. Again, the title may represent the loan of a finance company making an advance on the pledge of the accounts receivable.

These finance companies, which are also referred to as "receivable companies" or "discount companies," make advances for from 75 to 80 per cent of the selected accounts receivable. The accounts are then assigned to assure the payment of the loan. The account may be collected by the lender, but usually this is objectionable to the borrower, who feels that his customers would regard the arrangement with suspicion if not actual distaste. Under the more usual "nonnotification" plan, the customer is not notified of the lien, and the liability may be concealed from creditors.

When a concern arranges to sell or to discount its receivables, a contract is signed that provides, among other things, (1) the charges to be made and the times of payment by the assignor; (2) that, under the nonnotification plan, the assignor permit the finance company's auditors to call at their pleasure to inspect his books and other records; (3) that the assignor transmit on the day of receipt all original checks, drafts, notes, or other instruments received in payment or on account of any receivables sold to the company; and (4) that the assignor give the company power of attorney to transact any business relating to the assigned receivables, including indorsement of checks, drafts, notes, and other documents with the assignor's name. In addition, the assignor gives an actual assignment of his interests and title in the receivables, listing each invoice.<sup>3</sup>

The above is a statement of the usual practice; a few variations from it may be noted as follows:

1. Some finance companies also take notes and acceptances as well as accounts receivable. This is likely to be the case with retailers who sell such goods as automobiles and take one or more notes in part payment on the same.

2. Accounts and notes may be bought outright by a finance company or other factor. The commission or discount deducted is made sufficiently large to remunerate the purchaser for possible bad-debt losses as well as for interest. To secure the assignee of the account in case the invoice should be reduced because of returned goods, or because of any reason other than bad-debt loss, the actual advance will be somewhat less than the difference between the amount of the

<sup>3</sup> For a description of these various specialized financing companies, see H. G. Guthmann and H. E. Dougall, *Corporate Financial Policy* (New York: Prentice-Hall, Inc., 2d ed., 1948), Chapter 20.

account and the commission. After the account has been paid, the assignor receives the remainder of his share in the account.

Institutions that make this latter type of advance, typically on a "notification" basis, are known as factors and may occupy a special relationship to the assignor. An example is the commission house that sells the product of a cotton textile mill and also serves as factor. An agent who not only sells the merchandise but also guarantees and collects the account is known as a *del credere* agent.

3. Under the "notification" plan, the person who owes the amount receivable is notified of the assignment of the account and directed to make his remittance directly to the finance company. This arrangement is characteristic of factoring; the "nonnotification" plan is common where the receivables are only pledged.

Possible concealment of a pledge from creditors is one of the objections to such a plan of financing as it is ordinarily used. The assignee takes as security the choicest receivables, thus making the practice dangerous to the general creditors in the event of insolvency. As was pointed out in the preceding chapter, the quick assets are the most favorable basis for short-term credits. The rate of discount charged by these companies is also substantially higher than the bank rate. For this reason it is resorted to only where banking accommodation is lacking. The danger of concealment is one to be guarded against chiefly by the merchant creditor.

This practice of borrowing on pledged accounts is used by some concerns during periods of expansion to convert to cash capital that is "frozen" in the form of accounts receivables. It is criticized as permitting unwise overexpansion. The chief hardship seems to be in the burden of risk that it throws on the merchant creditor. If this form of credit is utilized, the business should be in a position to pay cash for the goods it buys, and should take its cash discount with regularity, in which case the objections to the practice are usually invalid.

**Accrued expenses.** Accrued expenses are seldom of sufficient amount to be important except for the income tax liability. They are chiefly significant as indicating careful accounting. The presence of accruals is an indication that the statements are not on a cash basis. The more usual accrued expenses are salaries and wages accrued, taxes accrued, and interest accrued. Sometimes the word *payable* is

- substituted for *accrued*, as "interest payable." An accrued expense is an amount especially calculated as of the date of the balance sheet and anticipates *an approaching transaction*, such as the payment of wages, taxes, or interest, to the extent that the past period is responsible for the future obligation. In contrast, an account payable is shown only when a purchase has been made and the invoice received. It represents a completed transaction.

**Dividends payable.** Accrued dividends are sometimes found in the list of accrued expenses. Such an account title would indicate that the dividends to stockholders were regarded as an accruing liability, an assumption that is incorrect. Dividends, even on preferred stock, are not a liability to the stockholders until the directors have met and declared the same; but a dividend once properly declared becomes an obligation as much as any debt, and should be stated as Dividends Payable or Dividends Declared.

Occasionally a corporation that wishes to continue its past dividend record but needs to conserve its cash temporarily will declare a scrip dividend. This scrip is a promissory note to the stockholder and will show as a current liability, "Dividend Scrip."<sup>4</sup>

Unlike the cash or scrip dividends that reduce the surplus and so the net worth, stock dividends (that is, dividends payable in additional shares of the corporation's own stock), merely transfer amounts from the surplus account to the capital stock and sometimes the paid-in (or capital) surplus accounts. An increased number of shares are then outstanding against the same total amount of net worth. Some corporations achieve the same effect of dividing up their net worth into a larger number of shares by a stock split. A split increases the number of shares without making any change in the stock and surplus accounts. The purpose of such increases in the number of shares is to influence the stock market and enhance the total value of the stock.

**Unearned income.** Deferred, or unearned, income, although frequently stated as a separate division of the liabilities, is sometimes

<sup>4</sup> On February 15, 1921, Sears, Roebuck & Company paid its dividend of \$2 a share in scrip redeemable on or before August 15, 1922, with interest at 6 per cent. The company had heavy current obligations at the time. Stockholders owning 50 shares or less were notified that the company had accepted an offer of Julius Rosenwald to purchase scrip certificates at par, so as to save such shareholders any inconvenience. For a fuller discussion of the various kinds of dividends and of dividend policy, see *ibid.*, Chapter 22.

included among the current liabilities.<sup>5</sup> Under the latter treatment, suitable allowance should be made for its difference from ordinary current debt. For example, the publisher of a periodical at the end of a year finds that he has been paid for 100,000 subscriptions that extend into the coming year for a period varying from one to twelve months, and the average is found, after testing, to be for a half year. If the receipt for these subscriptions was \$300,000, the unearned portion is \$150,000. An amount equal to the unearned portion should still be available in the form of current assets. As the year passes, the amount will be consumed by publication costs, except for whatever portion remains as profit.

The deferred income, "Prepaid Subscriptions," is the liability of the publisher for the goods yet to be delivered. Like any ordinary current liability, its extinction will reduce the current assets. Unlike the usual current debt, however, it can be met by the delivery of merchandise rather than cash and so is not dependent upon the sale of inventory and the collection of receivables. The three reasons for regarding deferred income as a special kind of liability are, then: (1) the liability may be liquidated by a delivery of goods or services rather than by the payment of cash, (2) a portion of the item may represent profit, and (3) in the case of some publishers additional revenue from advertising, sometimes considerably more than the subscription price, may accrue as the publication is printed and delivered to the subscriber. A substantial part of advance receipts for subscriptions may have been consumed in promotional costs. If these expenses are immediately absorbed and the full *pro rata* subscription set-up as deferred income liability, an understatement of current earnings and surplus may result.

The nature of deferred income must be examined in a given field of industry to determine its analytical significance. Its variable nature can be recognized by contrasting banking (Unearned Discounts), real estate (Rents received in advance), magazine publication (Prepaid Subscriptions), insurance (Unearned Premiums), and manufacturing (Advances or Deposits from Customers).<sup>6</sup>

<sup>5</sup> For an unqualified statement that "collections received in advance of the delivery of goods or performance of services" should be included among the current liabilities, see Research Bulletin No. 30 (1947) of the American Institute of Accountants.

<sup>6</sup> General Finance Corporation (1951) and Household Finance Corporation (1951) show the deferred income from notes receivable as a valuation reserve.

**Inquiries on details.** The foregoing study of working capital that has been outlined is a general one and has not taken up the question of securing details not reported. Ability to obtain additional facts will vary with the person and with the situation. Much can be done by shrewd analysis, but there are also differences in the power to demand details.<sup>7</sup> The executive of a company being studied clearly holds first place in this respect. His chief problem is to understand the significance of the figures presented, and to know when additional information is needed. He must also learn to place himself in the position of the unprejudiced outsider. Where possible, he should familiarize himself with reports of similar enterprises. Comparisons will bring out any weaknesses. The banker, because of his broad viewpoint in this regard, may be able to offer valuable assistance.

The bank credit man will ordinarily occupy second place in his ability to secure details. Because of the high standard of bank credit, the banker requires a particularly good insight into the financial affairs of his borrowers. As the banker, he can watch the deposits and withdrawals of the borrower, which may furnish him with useful information.

The other creditors with current claims stand in the third place in their ability to secure details. They should be able, however, to secure such information as has been outlined. By persistent, united effort, creditors for merchandise have found it possible to secure better and more complete information.

As a rule, the investing and speculative public are not in a position to demand intimate details. Their purposes are fairly well served, however, by the more condensed statements that are generally issued periodically. The work of the Securities and Exchange Commission has resulted in the fuller disclosure of material information. Well-planned publicity obtains a higher credit rating for the company issuing statements, and renders it easier to secure capital and to do so at more reasonable rates.

deducting it from the asset. Curtiss-Wright Corporation (1950) shows partial payments on contracts, under which title vests in the United States Government, as a deduction from inventories, as does Avco Manufacturing Corporation (1951) for "Progress payments received on United States Government contracts and subcontracts."

<sup>7</sup> Further explanation of the type of information sought to clarify the balance sheet and to supplement it is given in Chapter XI.

**Factors in working capital requirements.** The following is an outline of the factors that are fundamental in determining the amount of working capital required by a business, and is applicable to industrial enterprises that are engaged in trading or manufacturing. The factors have been classified under the particular current asset or liability affected.

I. Inventory.

1. Volume of Sales.
2. Distribution of Sales throughout Year, or Seasonal Variation.
3. Operating Conditions.
  - a. Need for Securing Stock in Advance of Manufacture or Sale.
  - b. Period of Manufacture.
  - c. Time Interval between Manufacture and Sale.

II. Accounts and Notes Receivable.

1. Volume of Credit Sales.
2. Terms of Sale.
3. Collection Policy.

III. Accounts and Notes Payable to Merchants. Credit Terms Applying.

IV. Notes Payable to Banks.

1. Credit Standards that Limit Amount of Credit Allowed on Current Assets.
2. Protection Afforded by Other than Current Assets.
  - a. Amount of Other Assets.
  - b. Method of Other Financing.
3. General Business Conditions.

V. General Factors.

1. Efficiency of Management.
2. Attitude of Management.

A healthy business should add a further item to the above list for cash balances even though the inflow of cash could balance the outflow. A reasonable amount of cash will insure the prompt payment of obligations, meet emergencies, compensate the bank for its services, and help credit standing. Actually, many small struggling business

concerns are so pinched for working capital as to have virtually no cash balance at the season of maximum need.

The inventory requirements of a business will vary according to whether the volume of business is large or small. A business that is subject to considerable seasonal variation in the volume of its business will need a larger maximum inventory for a given annual volume of sales than one that enjoys a regular flow of business. The inventory purchases of a straw hat manufacturer would be more or less bunched together at a single time during the year, whereas those of a retail meat market would be spread more evenly throughout the year, with frequent turnovers.

When there is uncertainty of supply or when transportation problems are to be met, increased inventories serve as a measure of protection. A long period of manufacture also adds to the inventory burden. If two plants are each disposing of 10,000 units of product per month, and they require two and three months respectively to manufacture, the first concern will be moving but two thirds as much production through its plant at a given time as the second. On January 1, the former company will have in the process of production two months' sales, which will be completed on or before March 1, or 20,000 units; the latter company, however, because it requires three months to complete its product, will have to have in process such work as is to be completed on or before April 1, or 30,000 units.

Upon the completion of manufactured goods, there is the waiting period before sale. Concerns that manufacture to order or that sell as rapidly as goods are produced have no problem of financing finished inventory. The reverse condition would exist where it is necessary to carry on hand large stocks of finished product. Whenever any of the conditions with respect to operation or sale mentioned in this paragraph can be improved, inventories can be reduced and turnover can be correspondingly increased.

The terms of sale and the pace at which collections are maintained determine the amount of capital that will have to be tied up in the receivables. The concern that grants credit is obliged to finance not only its own inventory but the goods on the shelves of its customers. The financing problem is especially important when a business grants a long-term or installment credit to its customers.

Easy terms of purchase will, in the reverse manner, aid a company in solving its working capital problem. Because advantageous cash

discounts are ordinarily offered, trade credit will be used only when absolutely necessary. Available bank credit, which is less expensive than trade credit as a means of reducing the working capital requirement, is dependent upon the credit standards of the bankers. These standards are the result of a study of the amount and suitability of the current assets as a basis for short-term credit. The amount and character of the fixed assets may also influence the banker in establishing his line of credit, if there is no other indebtedness to be applied against them. Marketable and unmortgaged real estate used in a business should add to its credit strength. Experienced bankers will also temper their standards in the light of current business conditions, making more stringent requirements in times of price uncertainty, particularly after a period of exceptional prosperity and price advances.

The points that have just been covered (points I to IV inclusive in the outline) are mainly significant in differentiating one type of business from another. As between individual businesses of the same type, variations will result from differences in the efficiency of management. A vigorous collection policy will, for example, reduce the volume of outstanding receivables. Operating conditions will also be made favorable for low inventories by improved production methods. Suitable accounting and statistical control make for the maintenance of minimum inventories.

The attitude of the management, conservative or speculative, will be an important element in the situation. Conservative persons will avoid large inventories for the purpose of price speculation, will tend to carry larger amounts of cash, and will utilize bank credit to the maximum only in exceptionally difficult times.

**General working capital considerations.** The advantages of adequate working capital lie in improved credit standing and ability to command credit, to take cash discounts, and to weather periods of business stress. But a large working capital is the converse of a low current debt and may mean that a business is doing less business than would be possible with the given margin of protective working capital. In general, creditors prefer to see liquidity emphasized (that is, a high current ratio and ample working capital) whereas owners want maximum profitability. This conflict between liquidity (or solvency) and profitability should be recognized and allowance made in interpreting the financial statements. In the following study of ratios,

we find conventional measures for the study of risk that arises in the use of credit to increase profitability.

**Ratio study of working capital.** The preceding chapter and this chapter up to the present point have discussed the anatomy of the working capital section of the balance sheet, as well as the general considerations governing its amount and administration. A suitable conclusion of this topic is a study of the usual relationships by which the reader is enabled to arrive at a decision as to the strength involved. The primary objective of this study, as of most balance sheet study, is to determine solvency; that is, the probable ability of the business to meet its debts promptly and without loss.

**The current ratio.** The ratio of current assets to current liabilities is probably the most frequently used ratio or proportion. (A ratio may be defined as the relationship, or proportion, that one amount bears to another. It is expressed as a percentage or as a fraction, the first number of which is the numerator and the latter the denominator.) The minimum of a "two-to-one ratio" is often referred to as a banker's rule-of-thumb standard of liquidity for a business. A demand for a 100-per-cent margin of current assets over the current liabilities is a precaution based on the practical knowledge of the possible shrinkage that may always occur in the property values of a business.<sup>8</sup> Such a requirement, where set up blindly, fails, however, to recognize the varying quality and characteristics of the current assets of different businesses. An even higher ratio does not assure liquidity in some cases. In a given class of retail stores, the quality of the receivables and inventory will vary considerably with the ability of the management. As between different kinds of businesses, the character or liquidity of the current assets, particularly the merchandise, will vary. For example, articles such as women's fashionable shoes are very much more likely to vary in value and salability than groceries.

Aside from these differences that are left out of consideration in a blind insistence on the "two-to-one" rule, there is the further objection that the ratio is practically sure to change in any business that

<sup>8</sup> The current ratio might be inverted, dividing the current liabilities by the current assets, with the result showing the amount it would be necessary to realize upon the current assets in order to pay the current liabilities in full. Thus, a four-to-one current ratio reversed would equal 25 per cent. If a business with such a ratio were liquidated and 25 cents were realized on the dollar, an amount would be had from the current assets equal to the current debt.

has any seasonal fluctuations in its trade. If the season starts from a dead halt, it will find accounts liquidated, shelves bare of stock, and cash in the bank. Activity begins with the purchase of merchandise and the assumption of debt. As goods are sold, the inventory is replaced by customers' receivables, while cash is diminished by the expenses of operation. The cycle is completed when the collections from the customers permit the liquidation of current indebtedness.

These changes in condition might be roughly illustrated in a balance sheet form as four successive steps, as follows:

<i>Current Assets</i>		<i>*Current Liabilities</i>	
1. Cash . . . . .	\$20,000	Accounts Payable . . . . .	\$500
2. Cash . . . . .	\$20,000	Accounts Payable . . . . .	\$40,500
Inventory . . . . .	40,000		
3. Cash (less \$10,000 expenses paid) . . . . .	\$10,000	Accounts Payable . . . . .	\$40,500
Accounts Receivable (inventory sold at 50 per cent mark-up) . . . . .	60,000		
4. Cash . . . . .	\$30,000	Accounts Payable . . . . .	\$500

Although this gives but a very crude picture of the cycle of business profit, it serves to bring out the point previously made that mere expansion of operations through purchases of merchandise reduces the current ratio. This is because the working capital, or investment in current assets from fixed sources, is relatively slow to change. Once the free cash is put to work, the more flexible current debt tends to rise with any further expansion of inventories and receivables whether it is the result of seasonal or growth influences. From a ratio of 40 to 1 (\$20,000:\$500), the ratio is changed to 1½ to 1 (\$60,000:\$40,500) by the addition of the same amount to both sides, a transaction involving neither profit nor loss. It is consequently necessary for the banker to know what the intentions of his customer are, as well as his present status, if he counts this ratio of any importance.

Here is one reason for using a fiscal year that ends at a time when operations and inventories are at a low seasonal ebb. The balance sheet will then show its best current ratio.<sup>9</sup> Concerns in the same

<sup>9</sup> Exceptional in this respect is the practice of Hunt Foods, Inc., in the canning industry. Mr. Edward Mittelman, Treasurer, in an address before the New York Society of Security Analysts (April 21, 1952) stated that using a fiscal year ending November 30 had the advantage of supplying costs immediately at

industry that have different fiscal years will have ratios that will not be comparable.

To summarize: the significance of the current ratio varies with (1) the seasonal influence, (2) the extent to which the balance sheet reflects the current realizable values at the date of the balance sheet, (3) the proportions of the different current assets—cash being more stable than receivables, and receivables generally more stable than inventory, (4) the degree of risk of possible value fluctuation in the particular kind of business, (5) the probable expansion or contraction of operations likely to occur subsequent to the balance sheet date, and sometimes (6) the form of current liability (see the discussion of deferred income above). The weight of these factors is a matter of judgment based upon a knowledge of the business in a given line. A wide study of statement material develops the necessary background.<sup>10</sup> The second point in the list is checked by means suggested later in this chapter.

**Limits on the line of credit.** If in a given case "two-to-one" is regarded as a proper minimum ratio, the current creditors, by referring to the balance sheet, may find what the limit to their line of credit should be. In the preceding illustration there was at the start a working capital of \$19,500 (\$20,000—\$500). With a two-to-one ratio, the amount of the working capital represents the limit of credit that may be had from current creditors. The limit of expansion would show a statement reading as follows (accounts receivable are omitted for the sake of simplicity, and the cash may, of course, be used for further purchases insofar as it is deemed wise).

the close of the packing season, which were useful for management purposes. In 1951, this gave a balance sheet with \$28,400,000 of finished goods inventory and bank loans of \$13,550,000. Four months later this inventory had dropped to \$17,400,000, and bank loans were paid off. He stated a May 31 closing would generally show cash alone in excess of current liabilities.

<sup>10</sup> Various balance sheet and earnings ratios for some of the large corporations may be found already computed in some of the investment services, as *Moody's Manual of Investments*. Since 1932, Roy A. Foulke has prepared annually fourteen ratios (medians and quartiles) for some 70 lines of manufacturing, wholesaling, and retailing, that are representative of medium and small concerns. For example, see his *The Concept of National Income* (New York: Dun & Bradstreet, Inc., 1952) with ratios for 1946-1950. The Federal Trade Commission and the Securities and Exchange Commission publish jointly a *Quarterly Industrial Financial Report Series* for all United States manufacturing corporations, which show dollar figures, current ratios, and ratios of cash and Governments to current debt by asset size groups as well as profits data by industries.

<i>Current Assets:</i>	<i>Current Liabilities:</i>	
Cash .....	\$20,000	Accounts Payable
Inventory .....	19,000	
	<b>\$39,000</b>	<b>\$19,500</b>

With a working capital of \$19,500 and a minimum current ratio of two-to-one, the line of credit or maximum current indebtedness may not exceed \$19,500, and the total current assets cannot be increased beyond \$39,000. The size of the stock of goods that may be carried under these restrictions will be determined by the need for carrying cash balances and for extending credit to customers.

To reduce to a formula the procedure for finding the line of credit:

1. Subtract one unit from the minimum current ratio permitted.
2. Divide the amount of working capital by the result, and the quotient will represent the maximum line of credit.

Thus, if our minimum current ratio is 3 (that is, 3:1), there will always be required two dollars ( $3 - 1$ ) of working capital for every dollar of credit granted. If, then, the working capital is divided by two, the maximum line of credit under the stipulated ratio is found.

The proportions of the current assets, current liabilities, and working capital will appear as follows when the minimum ratio of three is reached:

Current assets .....	<b>\$3</b>	Current liabilities .....	<b>\$1</b>
		Working capital .....	<b>\$2</b>

Then, if working capital = \$100,000,  
the line of credit =  $\$100,000 \div 2 = \$50,000$ .

Consequently, if the business with a working capital of \$19,500 made any further purchases through an expansion of credit with creditors, the current ratio would fall below two to one.

It may be argued that the line of credit computation is of theoretical rather than of practical significance, because creditors act independently and no one of them is in a position to enforce a limitation. If a business paid its bills on virtually a cash basis and sought short-term credit only from a single bank, the latter would be in a position to set up such a credit limit and enforce it. In view of the greater cheapness of bank credit than mercantile credit in many lines of business, this course is at least possible. Furthermore, if buying were concentrated so that one or a very few houses supplied the total

short-term mercantile credit, a similar controlled credit situation might exist. That the significance of the point is recognized may be seen in the statement form of the Federal Reserve Bank of New York (see page 253), where the question is asked as to the maximum and minimum amounts of current liabilities during the fiscal year and the time of their occurrence. This information as to minimum indebtedness sheds light on the ability of the business to clean up its debts during the period of minimum need; the maximum permits a rough calculation of the current ratio when the high point of credit use is reached, on the assumption that working capital remains fairly constant.

The desire to prevent overexpansion gives rise to the provision sometimes found in present-day bond indentures and in preferred stock agreements whereby the corporation issuing the security agrees that at all times it will keep the current assets in excess of the current liabilities by a certain per cent. Thus the requirement that "the current assets shall at all times be kept at least 150 per cent *in excess of the current liabilities*" simply means that the former must always be at least 250 per cent of the latter—a two-and-one-half-to-one ratio. A business with a working capital of \$1,500,000 could not, under the above rule, expand its current assets beyond \$2,500,000 without exceeding the limit. At this point it would have:

Current assets . . . . .	\$2,500,000	Current liabilities . . . . .	\$1,000,000
(Working capital, \$1,500,000; Ratio, 2½:1)			

An understanding of this principle reveals the double evil of the malpractice known as "window-dressing." A comparison of the two following balance sheets will illustrate the practice. The notes receivable in the first statement were of a doubtful character, having been given by customers of past-due accounts. By discounting these notes, cash was realized that was used in the reduction of current debts, giving the condition shown for "B."

#### BALANCE SHEET "A"

Cash . . . . .	\$ 200	Accounts Payable . . . . .	6,000
Accounts Receivable . . . . .	5,000	Net Worth . . . . .	5,200
Notes Receivable . . . . .	2,000		
Merchandise . . . . .	4,000		
			\$11,200
			\$11,200

## BALANCE SHEET "B"

Cash .....	\$ 200	Accounts Payable .....	\$4,000
Accounts Receivable .....	5,000	Net Worth .....	5,200
Merchandise .....	4,000		
	<u>\$9,200</u>		<u>\$9,200</u>

The above transaction has made two changes that are likely to lead the analyst astray. The "window-dressing" has (1) improved the appearance of the current ratio, and (2), eliminated an asset that would probably have aroused unfavorable comment. If, however, the notes are not paid at maturity by the makers, this business will be called upon to pay them. A contingent liability was assumed upon the indorsement of the notes. This illustration shows why the vigilant auditor looks for discounted notes and insists on adding to the balance sheet a footnote or otherwise indicating their presence.<sup>11</sup>

The limitation of credit to a given "line" may be applicable even when the credit is extended by a bank in the form of discounting notes that the borrower has received from his customers. However, such a line would probably be more generous than for unsecured, single-name paper. The bank discounting a block of indorsed notes receivable occupies a secured position, and the proceeds from the maturing notes cannot be diverted to other business purposes.<sup>12</sup> If no restriction were made to cover such borrowings, it would be possible to obtain credit in indefinite amounts, limited only by the concern's ability to secure notes. When the notes are received in the ordinary course of business for goods sold, the total discounted should be suitably limited so that the borrower will be able to make good on any defaulted notes. An unusual case, where the omission of all

<sup>11</sup> In contrast, a legitimate improvement in the current position would be the purchase of U. S. Treasury obligations to be used as payment for Federal income taxes, and their deduction from the accrued tax liability, instead of showing them as a current asset. The result improves the current ratio. Note that here no question can arise as to the acceptability or value of the asset for satisfying the liability from which it is subtracted. Deduction gives expression to the allocation of a specific asset to the payment of tax liability and recognition of the priority of the tax claim. For a discussion, see "Accounting for United States Treasury Tax Notes," Research Bulletin No. 14 of the American Institute of Accountants (1942).

<sup>12</sup> It might be argued that, once the sale of merchandise has been effected, the subsequent extension of credit is purely a "banking" function and so most properly shifted to the commercial bank and that bank credit extended for "general" purposes is more likely to go into improper nonliquid uses.

reference to discounted notes was particularly deceptive because they were not received from ordinary customers, is seen in the following working capital statement of the H. B. Clafflin Company, a wholesale dry goods concern interested in a number of retail outlets:

**H. B. CLAFLIN COMPANY**  
**STATEMENT OF WORKING CAPITAL**  
As of December 31, 1913

Cash . . . . .	\$ 2,800,000	Open Accounts . . . . .	\$4,500,000
Bills Receivable . . . . .	2,100,000		
Accounts Receivable . . . . .	2,000,000		
Merchandise . . . . .	5,800,000		
Total Current Assets	<u>\$12,700,000</u>	Total Current Liabilities	<u>\$4,500,000</u>
Working Capital . . . . .			<u>\$8,200,000</u>

A two-to-one ratio would permit the above working capital to support a credit line of \$8,200,000—or a one-and-one-half-to-one ratio, \$16,400,000. Actually, the Clafflin Company had discounted about \$30,000,000 of notes receivable in addition to securing trade credit of \$4,500,000.<sup>13</sup> The notes were not all trade receivables, a fact that presumably would have been apparent from comparison with sales had the figures been available.

Ratio study would be improved, then, by the inclusion among the current assets of all notes, whether discounted or not, until their maturity. An offsetting item would appear for the proper amount under the heading "Discounted Notes" among the current liabilities. Although such a practice is unusual in the balance sheets of manufacturing and trading concerns, it is the form that banks employ to show the amount of notes received from their customers which they have rediscounted.<sup>14</sup> The reader can appreciate the possible value of such a method by imagining its operation upon the statement of working capital just used, where such a form would have clearly revealed the condition of overexpanded credit.

**Quick assets and current debt.** The frequent superiority of receivables to inventory as a basis for credit suggests a second ratio of quick or "fixed value" assets (that is, cash and equivalent and receivables) to current liabilities as a supplement to the commonly used current ratio. (Cash and receivables are claims to a fixed num-

<sup>13</sup> The case of the H. B. Clafflin Company is discussed more fully in Chapter XI, under the heading "Contingent Liabilities."

<sup>14</sup> For the treatment of "rediscounts" by banks, see Chapter XVII.

ber of dollars, whereas inventory has a fluctuating price.) A creditor bank might even find it desirable to have an understanding with its customers that both the current ratio and the quick asset ratio be kept up to at least a certain standard. It might be wise, for example, in a given business, to keep the quick assets at least equal to the current obligations at all times. In many lines of business, a concern whose current assets consist largely of inventory can very easily become technically, if not actually, insolvent within an incredibly short period of time, and so some writers have suggested calling this ratio the "acid test" or the "quick ratio."

Marketable securities, representing cash temporarily invested, are normally added to cash and receivables before this ratio is computed. When the investments are truly liquid (that is, both marketable and stable in price), no problem arises. But if the commitments can fluctuate in price, they hardly merit the designation of quick assets and rather resemble inventories. Fortunately, concerns that possess marketable securities are generally those which invest because they have an abundance of working capital and do not have a current debt problem. Wherever the working capital position is not indubitably strong, assurance should be had that the rule already cited of "cost or market, whichever is lower" is observed in respect to the marketable securities before they are included in the "acid test" ratio.

**Testing receivables.** A third ratio, designed as a test of the receivables, compares that figure with the net sales. As suggested in the discussion of the current ratio, much of the significance of that widely used test of solvency depends upon the realizable value and the liquidity of the current assets shown in the balance sheet. In most mercantile and manufacturing balance sheets, the receivables and inventories are of greatest importance, and any clue as to how much and how soon cash will be realized is of the utmost importance. If the person making the study is privileged, as the banker usually and the merchant creditor sometimes is, he may request that the accounts be classified as to whether they are overdue or not. Such a classification is better than one which distributes them under the headings "Good," "Doubtful," and "Uncollectible." Such terms are entirely too indefinite to indicate the degree of collectibility. If the report is for the executive, the latter may even have the overdue accounts divided still further, according to whether they are overdue from one to 30 days, 31 to 60 days, 61 to 90 days, or for a longer period. Such

a classification, together with the amounts allowed for losses through bad debts, provides a basis for a general estimate.

A more definite test is found in the ratio to be had by dividing the receivables (accounts and notes receivable from customers only) by the average net credit sales per day. Thus, if the net credit sales for the year were \$360,000, the average daily sales would be \$1,000, and accounts receivable of \$60,000 would give a ratio of 60:1 ( $\$60,000 \div \$1,000$ ). (It is customary to use a 360-day basis rather than the accurate 365 days.) The receivables would represent, then, uncollected accounts for sixty days, or two months.

The purpose of this comparison is to learn how old the accounts are with a view to valuation of the total and partly to learn how fast cash will flow from their collection. If in the above case the credit period is 30 days, it appears that at least half the accounts are overdue. If the average customer took the full period of 30 days, it would be expected that but one month's sale, that is, the accounts of those persons sold to in the last 30 days, would be outstanding. Less than that amount in the balance sheet would show that customers were prepaying or discounting bills. Inasmuch as some customers are likely to prepay or discount their accounts, even a total of only 30 days' sales in the form of receivables would indicate the probable presence of some overdue accounts. This test indicates the *average age* of the receivables.

In the absence of figures on credit and cash sales, the ratio of *total* sales to receivables is sometimes used as a crude but more readily computed test of "receivables turnover." In this form it may be readily converted into the ratio suggested here by dividing the ratio into 360. Thus, if sales are 12 times receivables, then the business has 30 days' ( $360 \div 12$ ) sales outstanding.

The lower this ratio is, with reference to the usual credit term, the less likely is the receivables account to contain old and valueless amounts. The more quickly the customers pay, the less the risk from bad debts, the lower the expense of collection, and the more liquid the nature of this asset. Clearly, where this ratio is high, indicating an unfavorable state, the greater must be the allowance for loss of value in the liquidation of the receivables, and the higher must be the current ratio in order to protect the current creditors.

Some credit men in estimating the position of debtor customers from their balance sheet apply some arbitrary method of reduction

to accounts receivable that run in excess of the amount expected in view of the usual credit term. Thus, if the credit term were 30 days, the analyst might allow 100 per cent value for receivables equal to 30 days' sales, 50 per cent for receivables equal to another 30 days' sales, and a zero value for all receivables in excess of that amount. After making such a reduction in the valuation of the receivables, the current ratio and "acid test" ratio would be recomputed. Such a plan does not attempt exact justice, but is a practical rule of thumb based upon experience and designed to bring about some rough comparability between the ratios of debtors who obviously have receivables of greatly different quality or value. The reader who knows the average collection period may also estimate the rate at which cash will flow in from the receivables. Thus, if they turn over in 60 days, an amount equal to 30 days' collections, or one half, will flow in during the following month. Receivable collections plus cash sales represent the ordinary and regular source of cash receipts with which expenses, accounts payable, and other current obligations can be met.

A weakness in this test of receivables is the frequent failure to take the credit sales only, omitting cash sales, because the total sales may be the only figure available. In some fields, a distinction between installment credit and open account credit sales is really necessary for adequate analysis. Again, seasonal variations are a factor. If a quarter of the year's sales were made in the month preceding the date of the balance sheet, it would be unfair to expect accounts receivable to be equal to only one twelfth of the total year's sales. Yet the most convenient time for preparing a balance sheet would be just after the busy season, when the stock of goods was low. Both the seasonal factor and the length of the credit term granted customers must be considered in analyzing this relationship.<sup>15</sup>

The Retail Credit Survey conducted from time to time by the Federal Reserve System reports the average collection period for various important retail lines. Illustrative figures are given in the

<sup>15</sup> A table of customary terms of sale for a long list of commodities is given in Theodore N. Beckman, *Credits and Collections in Theory and Practice* (New York: McGraw-Hill Book Co., 5th ed., 1949), pp. 783-789. Roy A. Foulke gives the customary terms of sale for 78 lines of business in *Financial Guides to Healthy Business Management* (New York: Dun & Bradstreet, Inc., 1951), pp. 58-62. He notes a tendency since World War II toward the elimination of, or a reduction in, discount rates and a shortening of net credit terms, which he attributes to low interest rates.

accompanying table for both ordinary charge and installment accounts. The interested reader can consult these surveys for further detailed information showing variations in these measures from year to year for businesses of different size (sales volume) and in different parts of the country. Variations are considerable.

#### AVERAGE COLLECTION PERIOD FOR ACCOUNTS RECEIVABLE

Kind of business	Charge account (in days)		Installment (in months)	
	1951	1950	1951	1950
Automobile dealers	50	47	—*	—*
Auto tire and accessory	37	49	13	15
Department stores	64	62	13	15
Furniture stores	64	69	13	15
Hardware stores	52	55	11	12
Household appliance stores	56	56	14	16
Jewelry stores	63	63	14	13
Men's clothing stores	61	59	8	7
Women's apparel stores	69	67	7	7

\* Not reported because generally sold to others. Reported at 17 months in 1949.  
Source. *Federal Reserve Bulletin*, June 1952, p. 644.

Auto tire dealers show the shortest collection period for open accounts. If grocery stores were shown, a similar shorter period would be expected. The characteristic installment period is longest, however, in the case of automobiles and shortest for men's and women's clothing stores. In recent years, the collection period for many manufacturers and wholesalers has run around 30 days, with perhaps half that for some lines such as confectionery, meats, dairy products, and fresh fruits.<sup>16</sup>

Sometimes figures are published showing collection experience in the form of "per cent collected monthly on open credit sales." Such data can be converted to the form shown in the table by dividing such percentages into 30 days to arrive at the number of days accounts are outstanding. Thus, if 50 per cent of the accounts outstanding are collected in the ensuing month, the average collection period will be 60 days ( $30 \div .50 = 60$ ). Conversely, an average collection

<sup>16</sup> For collection periods for various manufacturing and wholesale lines, see Foulke, *op. cit.*

period of 60 days means that the ensuing month will expect to see a cash inflow of but 50 per cent of the amounts outstanding at the beginning of the month.

In general, smaller concerns, especially in retail lines, are slower in their collections and suffer the larger bad-debt losses. Here lies the gravest trouble for many small businesses and the focal point of weakness in their balance sheet. After surviving the difficult initial period of getting established, they gradually succumb to an accumulation of slow and bad debts. The failure of cash to flow in a normal manner from their own debtors finally impairs their own ability to meet current obligations to the point of failure. Where trade debtors develop a slow payment condition, the creditors find it necessary to analyze the situation behind the figures to decide whether the trouble is chronic and fatal, or temporary and subject to cure.

**Testing inventory.** The fourth important ratio is a test of inventory to discover possible trouble in the form of overstocking or overvaluation. It is a comparison of the amount of goods sold per year with the stock carried. The method of stating this ratio may be either:

$$\frac{\text{Cost of the Goods Sold}}{\text{Inventory at Cost}}$$

or,

$$\frac{\text{Sales}}{\text{Inventory at Selling Price}}$$

The result is called the *merchandise turnover*. If goods costing \$12,000 were sold during the year, and a stock of \$1,000 at cost is carried on the shelves and in the stockroom, the merchant would be said to have turned over his stock 12 times. Because the amount of inventory is likely to fluctuate, the most nearly exact method of figuring this ratio would be to use the average figure for the year. To obtain an average, the business must either keep a perpetual inventory (that is, a record which shows the balance of stock on hand at any given date), or take inventory at frequent intervals. Management may calculate such a ratio by averaging the end-of-the-month inventory figures to get average inventory. Such frequent check-up of the inventory, even if based on estimated figures during the year, is likely to draw attention to excessive inventory, which is a chief evil the ratio is intended to disclose. Departmental figures may

also be checked to see that a satisfactory average does not conceal unbalanced departmental inventories. Similarly, the raw materials, work in process, and finished goods inventories of a manufacturer may be tested separately.

The creditor or investor must ordinarily be content with annual balance sheets and so knows only the initial and final balance sheets for the year. The two inventory figures thus available may be averaged to compute a turnover figure, which will only be in accord with the correct figure based on average inventory if the business lacks seasonal variation in stocks carried.

Probably one of the ratios most used by persons outside of the business is the relation between goods sold during the year and the final inventory. Sometimes, only a single annual report is available. In any case, the outsider is as much, or more, interested in testing the most recent inventory for possible overvaluation or overstocking as he is in merchandising efficiency and proper stock control. The resultant ratio, which is sometimes called "turnover," is more correctly thought of as a check-up on the relative size of the most recent inventory figure to discover a possible lack of normal liquidity and, consequently, the significance of the inventory for debt-paying purposes.

A basic criticism of this ratio is that any inventory is purchased for the purpose of *future* sales and must be sold after purchase, so that comparison with the volume of goods sold in the *preceding* year is wrong in principle. This criticism is most important where the sales outlook for the year ahead is radically different from that of the year preceding. For many businesses, however, which change but little from year to year, the ratio provides a rough check that enables the creditor to discover any substantial difference between a business and others similar in kind of goods sold, in size, and in location. The final inventory is the inventory of chief interest to the analyst for credit purposes, and this ratio is used not so much to test turnover efficiency as to give an idea as to whether the size of the inventory itself is proportionate to the volume of business.

If the analyst after learning what the customary ratio is finds that the business under study has an inventory at the end of the year so large as to give a subnormal rate of "turnover," he should seek the reason. Three unfavorable possibilities are suggested: (1) that the stock contains accumulated unsalable goods; (2) that the business

has overbought; or (3) that the value of the stock has been overstated. Credit analysts can often learn the explanation through the reports of salesmen on quality and probable value of stock, interviews with the debtor, and a knowledge of current business conditions. Investment analysts typically deal with large companies, most of which use inventory controls, and generally find an explanation of an unusual ratio in industry conditions or in supplementary information contained in annual reports to stockholders.

It is well, however, to look forward as well as backward, because the stock held at the end of the period is to be sold in the following period. Thus what might seem to be an overbought condition may be forehanded purchasing for an expanding market. On the other hand, an apparently normal inventory may be an overstock in view of a waning demand.

Another limitation upon the analysis by the outsider is his inability to obtain the figure for the cost of goods sold. The details provided may be limited to Sales and a lump figure representing the sum of the cost of goods sold and operating expenses. For want of a better method, the ratio is then computed as Sales (goods sold at *selling* price) to Inventory (goods in stock at *cost* price). The result is not a turnover figure but an overstatement by the per cent by which sales exceed the cost of goods sold. The figure is useful, however, for comparative purposes.<sup>17</sup> If the analyst is familiar with gross profit margins of the particular line of business and they are not too variable, he can estimate a figure which will be substantially correct from the formula:

$$\frac{\text{Sales}}{\text{Inventory}} \times \text{Usual Ratio of} \frac{\text{Cost of Goods Sold}}{\text{Sales}} = \text{Actual Turnover (approximate)}$$

Thus, if the gross profit margin is usually 20 per cent, it is the equivalent of saying that the cost of goods sold is usually 80 per cent of sales. To get actual turnover, the ratio of sales to inventory would be multiplied by 80 per cent, and in a case in which the ratio was 5, the turnover figure would be 4.

<sup>17</sup> Foulke, *op. cit.*, reports the actual Net Sales to Inventory ratios for various lines of business, as does the *Retail Credit Survey—1949*, previously cited, for nine retail lines. Inventory turnover is reported for fifty lines of trade in Walter L. Mitchell, Jr., *Standard Ratios for Retailing* (New York: Dun & Bradstreet, Inc., 1940). Other data are given in Edward F. Gee, *The Evaluation of Receivables and Inventories* (Cambridge, Mass.: Bankers Publishing Co., 1952).

What the turnover should be for any given business must be determined by the experience of concerns in that line. Research among retail stores in certain lines shows that a close relation exists between size and turnover, the larger units showing higher turnover.<sup>18</sup> Hence, the averages in the following table are subject to variation growing out of natural differences in operating conditions:

TABLE OF AVERAGE STOCK TURNOVERS FOR RETAIL STORES\*

Dairy & Poultry Products .....	36
Restaurants .....	26
Filling Stations .....	16
Groceries (Independent) .....	10
Specialty Stores .....	5
Drugs .....	3
Furniture .....	2.7
Dry Goods & General Merchandise .....	2
Hardware .....	2
Shoes .....	1.8
Jewelry .....	1

\* Compiled from Walter L. Mitchell, Jr., *Standard Ratios for Retailing*.

The chief cautions to be observed in the use of this ratio are to allow for:

- (a) The seasonal influence, when present. If the balance sheet of a manufacturer is made up in a slack season, when inventory is much less than average, an impression of very high turnover is given.
- (b) Conditions of supply that require stocking in advance. A chain of metropolitan grocery stores with markets at their doors and therefore able to replenish stocks on a few hours' notice might well show better turnover than a rural store located at a distance from markets.
- (c) Difference in functions by businesses in nominally the same field. Of two chain store systems, one might buy at wholesale what it sold at retail whereas another might engage also in warehousing, importing, and even manufacturing. Of two manufacturers, one may do little more than assemble parts made by others, whereas another

<sup>18</sup> Illustrations of the relation of turnover and store size for hardware, department, and specialty stores, drawn from results of the Harvard University Bureau of Business Research, are shown in convenient form in John W. Wingate's *Retail Merchandise Control* (New York: Prentice-Hall, Inc., 1933), p. 170. For a discussion of the turnover problem, see C. W. Barker and I. D. Anderson, *Principles of Retailing* (New York: McGraw-Hill Book Co., Inc., 1941), pp. 259-279.

may not only carry<sup>18</sup> on the manufacturing but may also acquire sources of raw material and integrate a long series of processes. The more functions assumed by the business, the longer the period between purchase of inventory and its sale in final form, or, in brief, the slower the turnover.

(d) The trend of prices. Larger inventory and consequent lower turnover is likely when the prospect is for higher prices, and *vice versa*. Although such a course is speculative and should be kept within bounds, it is a necessary incident of business.

(e) The trend of volume for the business. Inasmuch as stock is purchased for future sales, the inventory may reasonably be somewhat higher than usual in relation to past sales when the prospect is for larger volume.<sup>19</sup>

**Overstock and fraudulent failure.** Overstock is a weakness, but it may mean more. Sometimes it is a forerunner of fraudulent failure. The proprietor who intends to defraud creditors first establishes his credit with a few houses by prompt payments. He later buys as widely and as heavily as possible on the basis of this reputation and then makes away with such assets as he is able. This method of fraud is so well recognized that agencies supplying credit information watch closely whenever a debtor suddenly shows unusual buying activity.

This condition can seldom be detected in the statements, because it is a disease which works rapidly from what is superficially a normal business condition. Although the business that fails fraudulently in this way is ordinarily a new one and frequently has a proprietor with a doubtful history, there have been instances where these frauds have been worked by unsuccessful merchants who have become disheartened by their lack of success. Some of the latter cases have been traced to the instigation of persons with a bad record who were familiar with the "profits from failure."

**Ratios and LIFO inventory valuation.** Much of what has been said here about ratios becomes more or less meaningless where the book value of inventories are reported on a LIFO cost basis. Under

<sup>18</sup> Actually, inventory policy tends to look backward more often than forward. One correlation study showed the closest relation between end of the quarter inventories and sales two quarters earlier. W. W. Jacobs and S. F. Broida, "Current Inventory Developments," *Survey of Current Business*, April, 1949, p. 14.

most other methods of inventory valuation (except the similar base-stock method), book values are constantly moving with the turnover of goods in the direction of current market valuation. When, however, goods are assumed to be sold from the latest purchases (last-in-first-out or LIFO), the books show the balance of merchandise remaining as inventory at acquisition costs of the more and more distant past. (This is the opposite of even the fixed plant and machinery, which tends to move slowly toward current values as age brings about replacement.) To attempt to measure inventory turnover by comparing the cost of goods sold at prices current during the year with inventory valued at the prices of perhaps a decade earlier is an obvious absurdity. Similarly, if LIFO gives an inventory book value at substantially less than current replacement value, the current ratio becomes an understatement of solvency.

LIFO has had its chief vogue and function in reducing income taxes upon the unreal profits of inflation.<sup>20</sup> In this way, it has "improved" the profit and loss statement, but has made the balance sheet less useful for analytical purposes. Wherever information on the current position is essential, as in the fields of bank and trade credit, the replacement value of inventories, parenthetically stated in the balance sheet, is a necessary supplement to the LIFO figure to provide adequate disclosure. For ratio study, the market, or replacement, value figure should be used to obtain more meaningful figures that will permit interyear and intercompany comparisons. A current creditor must base his extension of credit upon the current and probable future value of the current assets rather than upon their historical cost of the distant past. The ratios he employs must utilize data relevant to the credit decisions he is making.

Such replacement value figures are also useful to the investment analyst wishing to make intercompany comparisons. LIFO has destroyed such comparability even within industries where it is widely used, chiefly because of (a) the adoption of the method by different companies in different years and so at different initial price levels, (b) the application of the method to different portions or departments of their business (companies use more than one method), and (c) differing rates of company growth so that varying proportions

<sup>20</sup> A fuller statement of motives behind the adoption or nonadoption of LIFO, as well as details of practice, are given in J. K. Butters, "Management Considerations on LIFO," *Harvard Business Review*, May, 1949, pp. 308-329.

of their inventories are valued at the several price levels of the different years of the past.<sup>21</sup>

**Accounts payable turnover.** The "accounts payable turnover" ratio is designed to show how long the business would require to retire its current debt from operations. It parallels the test of receivables described above, but is usually stated on a per-month basis, although the day basis could be employed. The formula is:

$$\frac{\text{Accounts Payable}}{\text{Sales Minus Expenses (Average per Month)}}$$

Thus, if sales amounted to \$5,000 per month and expenses were \$1,000, a balance of \$4,000 would be available to retire accounts payable or other current debt. If the accounts payable amounted to \$6,000, it would indicate that one and a half months would be required to retire such debt. This period is regarded as the probable average length of time that the debtor will take to pay. The test is crude but often useful in mercantile credit work, where it can be checked against the actual record of the debtor by inquiry among his creditors and by an interchange of ledger experience.

A study of the assumptions that would make this ratio meaningful is helpful to an appreciation of the cash movements behind operations and the balance sheet that are the force that makes the business liquid and solvent or the reverse:

1. Only the expenses and not the cost of goods sold are deducted from sales (expected receipts) because the latter are expected to be represented by new accounts payable and the cash applied to the older accounts in the order of their age.
2. Sales are treated as the equivalent of receipts, even though they may be for credit, on the assumption that any credit sales will be counterbalanced by collections of old accounts. Such a condition would be untrue (a) in a seasonal business, (b) when a business was growing rapidly, or (c) when receivables were growing because of a weak collection policy.
3. But what of the other current debts besides accounts payable

<sup>21</sup> The debate over disclosure of replacement value by users of LIFO are given by S. Y. McMullen, "Replacement Value of LIFO Inventories Should be in the Balance-Sheet" and M. E. Peloubet, "Disclosure of Current Value of LIFO Inventories is Not Normally Useful," *Journal of Accountancy*, June, 1950, pp. 480-487 and 487-489, respectively.

that are not included in this "turnover" calculation? For small businesses such other items are often negligible. When they do exist, they consist chiefly of accrued expenses and Notes Payable to Banks.

(a) The accruals are ignored on the assumption that they are being constantly replaced by other equal items. Their actual impact on cash is represented by the payment of the expenses, which were recognized in the deduction for expenses from sales in the turnover formula. With the inauguration of the corporate Federal income tax speed-up in 1952, this assumption became untrue. To the extent that more income tax has to be paid in the first two quarters of the year, the burden of taxes upon cash as reflected by the expense deduction will be understated by the excess of taxes paid over taxes being shown currently as expense (accrued). The reverse will be true in the last two quarters of the year.

(b) Notes payable to banks are omitted from this debt turnover ratio because they run for a longer period than the accounts, and payment may be postponed by renewals. Bank loans are typically liquidated either by a seasonal contraction of the current assets that releases funds (illustration on page 103) or by funds generated from operations in excess of what is needed to cover current expenses and merchandise purchases (accounts payable). In a nonseasonal, static business, an estimate of how long the business would take to clean up bank loans can be had by subtracting monthly expenses *plus cost of goods sold* from monthly sales. Any other similar debt, such as current installments of a long-term debt could be included in such a calculation.

4. No distribution of profits is assumed. Where cash is being used for withdrawals of proprietors or dividends, such amounts are, like the expenses, a reduction of the receipts available for debt-paying purposes.

5. Similarly, it is assumed that the business does not divert cash to other sections of the balance sheet, as to pay long-term debts or acquire fixed assets.

6. The seasonal influence is also ignored. The use of average monthly sales and expenses makes the assumption that the flow of business is fairly regular through the months of the year.

The numerous assumptions might seem to make this ratio of more theoretical than practical interest. Yet in the field of mercantile

credit or bank credit analysis where it might be employed to check the balance sheet of a small business that does have a working capital problem, many concerns do have a relatively nonseasonal and fairly static condition. The special problem of noncash expenses, such as depreciation, is deferred partly because of its relative unimportance to the type of small concern for which this ratio is used and partly because its fuller analysis is more appropriate at a later point.

**Mixed or duplicating ratios.** Other ratios for the study of current position will be found in use from time to time. They are not recommended here, either because they are believed to represent a mixture of diverse elements that are obscured rather than illuminated by such calculations or to duplicate ratios already mentioned. Because they have appeared useful to some writers, they are listed here with a brief comment as to why they seem to have a mixed or duplicating character.

1. *Current asset turnover*, or sales to current assets. This ratio is chiefly determined by the turnovers of the two major current assets, receivables and inventories. These two turnovers are best analyzed separately along the lines suggested earlier in this chapter. Mixing the two reduces the clarity of the analysis. The influence of cash, or cash and marketable securities, upon current asset turnover is dissimilar and opposite. High turnover of either receivables or inventory means a more rapid movement towards cash and liquidity; high turnover of cash spells inadequate cash and poor liquidity. When an increase in different elements of a ratio spell opposite conclusions, the ratio is likely to be confusing in its message. The idea behind the current asset turnover is to give an over-all impression of how rapidly the total investment in current assets is being turned and is thought of by some as an index of "efficiency" or "profitability."

2. *Working capital turnover*, or sales to working capital. This ratio differs from the preceding in that the divisor is the working capital, or *net* current assets, instead of the total current assets. It will tend to increase with increasing current asset turnover and tend to decrease as the current ratio increases (that is, as the proportion of current assets represented by working capital increases). To the extent that this ratio is the result of the relation of receivables and inventory to sales, it contains a significant element in common with the current asset turnover ratio; but its use is open to all the objec-

tions made against the latter plus the fact that it introduces the influence of current debt. If the business suffers from a relatively high current debt—that is, has a low current ratio—the business will show a relatively higher ratio of sales to working capital. A high working capital turnover may reflect efficient receivables and merchandise turnover, but it may just as well reflect a dangerously low current ratio. But a ratio which can tell either of such opposite stories is a blur of a number of relationships. In this case, the three chief factors are more suitably studied individually in ratios previously discussed; namely, the current ratio, the receivables test, and the inventory test.

An illustration of the points made with respect to these two foregoing ratios follows. The sales and current assets for Companies *A* and *B* are alike, so that current asset turnover is the same. Yet one would hardly say that the two concerns were utilizing their current asset investment with equal efficiency. The reason the ratios are alike is that the stronger cash position of *A* just counterbalances *B*'s slower turnover of receivables and inventory. As for working capital turnover, *B* has a higher and presumably more favorable figure largely because of its higher and presumably unfavorable current debt. The interpretation of the difference in working capital turnover depends in this case upon the current ratio difference whereas in others it might be the effect of different current asset turnovers. In either case the explanation has more analytical significance than the working capital turnover ratios.

#### COMPARATIVE WORKING CAPITAL OF COMPANIES *A* AND *B*

	A	B
Cash .....	\$ 10,000	\$ 5,000
United States Bonds .....	15,000	—
Receivables .....	10,000	20,000
Inventory .....	25,000	35,000
Total Current Assets .....	\$ 60,000	\$ 60,000
Current Debt .....	\$ 10,000	\$ 30,000
Working Capital .....	\$ 50,000	\$ 30,000
Sales .....	\$100,000	\$100,000

3. *Receivables to merchandise.* When merchandise is sold, a profit has been added that raises the proportion of current assets to current liabilities. Because of this fact, it has been argued that the current ratio is "inflated" to the extent of the profit. As a matter of fact, the

gross profit is largely offset by operating expenses incurred concurrently. To draw an analogy between carrying merchandise at selling price and carrying receivables at their face value also ignores the fact that the sale marks the point of profit realization. An increase in the ratio of receivables to merchandise is not necessarily a signal for raising the current ratio requirement; the change normally denotes increase of strength in the asset group in that the receivables are often a more liquid item. An increase in the proportion of receivables will represent a weakness only when it is due to slower collections or accumulated bad debts—a condition to be detected from the sales to receivables ratio.

4. *Inventory to Working Capital.* A ratio of the inventory to working capital is sometimes used to point up the relative risk of working capital loss that may arise from a drop in inventory values. So long as inventories are less than working capital, a price decline for inventory will register a smaller per cent reduction in the working capital (that is, the margin of current assets over current debt); when inventory exceeds working capital, the given percentage impact of a drop in the former will be a greater one upon the latter. Thus, in the following illustrative case, a 50 per cent drop in inventory (\$100,000) before inventory expansion took place would represent only a 40 per cent loss of working capital. If inventory were to be bought so as to raise it to \$400,000 with no increase in working capital, then a 50 per cent drop (\$200,000) would virtually wipe out the working capital of \$250,000.

#### WORKING CAPITAL POSITION BEFORE AND AFTER INVENTORY EXPANSION

(thousands of dollars)

	<i>Before</i>	<i>After</i>		<i>Before</i>	<i>After</i>
Cash .....	\$ 40	\$ 40	Current debt .....	\$150	\$350
Receivables .....	160	160	Working capital .....	250	250
Inventories .....	200	400			
Current assets .....	\$400	\$600	Cur. liab. & work. cap	\$400	\$600

Actually, the ratio of inventory to working capital is complementary to the quick ratio and tells the same story in a different way. If the quick ratio is over one, the inventory to working capital ratio is less than one and the current creditors are more than 100 per cent protected by the quick assets. If inventory expansion is carried so far as to exceed the fixed investment of owners and long-term credi-

tors (that is, working capital), the quick ratio will be less than one and the current creditors will have that much excess risk to bear from possible inventory price fluctuation. Some find this extra ratio helpful; others will find this inventory expansion hazard adequately reflected in the quick and current ratios.<sup>22</sup>

**Summary.** The study of working capital is primarily a test of short-run solvency, although light may also be shed on the effectiveness with which the business is being conducted. Tests of receivables and inventory should be regarded primarily as relating to solvency rather than to efficiency. Standards of turnover should always be held as tentative, for the final test of the effectiveness of business management is found in the ability to produce adequate profits and to remain solvent. Where, however, the profit test (discussed later) has been applied and appears satisfactory, a question may be raised if the study of receivables and inventory suggests slow collections and low stock turnover. The possibility exists that reported profits may be actually overstated because of a failure to make sufficient allowance for losses from bad debts and from obsolete or shop-worn merchandise.

The study of working capital will ordinarily involve (1) the proper arrangement of the balance sheet items, if that has not already been done; (2) a scrutiny for unusual or improper practices; and (3) the computation and study of the ratios suggested, which are (a) the current ratio, (b) the "acid test," or ratio of current assets less inventory to current debt, (c) the receivables test, (d) the inventory test, and sometimes (e) the ratio of accounts payable to the excess of average monthly sales over expenses. Some further discussion of the subject will appear in appropriate places in subsequent chapters.

<sup>22</sup> Other ratios relating to working capital position that have been suggested are (a) Cash to Current Assets, as a test of liquidity, (b) Cash to Notes Payable, Bank Loans, or Current Debt, (c) Receivables to Current Assets, as a test of frozen receivables and (d) Inventory to Current Assets, as a test of over-investment in inventory.

## CHAPTER .VI

### Fixed Asset Analysis

**Relative importance.** Although the banker and the mercantile creditor very generally regard the working capital section of the balance sheet as far more important than the fixed assets section, the investor finds that the latter requires careful study. Even the banker making term loans repayable over a period of years finds his interest in the fixed assets increasing. In a small trading concern, the fixed assets, or store property, may be rented and the owners' investment may be largely to supply working capital. At the other extreme, the great public service corporations have most of their investment in fixed plant financed by bonds and stocks; their working capital section may show but relatively small amounts.

**The double balance sheet.** With this second portion of the balance sheet before us, we are presented with two problems: (1) What is the proper value of these fixed properties? and (2) What relation do these assets bear to the opposing security issues? The current items should at least be classified and separated in order to make the figures to be analyzed stand out more distinctly. The following illustrative figures of the National Dairy Products Corporation are in a special form of double balance sheet that divides the balance sheet into two parts: the first shows working capital; and the second, fixed assets and capitalization.

As the current assets exceeded the current liabilities, it was necessary when making a division to put their difference on the asset side of the fixed capital section, to bring the latter into balance. This treatment emphasizes the fact that the working capital is that part of the current assets contributed by the investors (bondholders and stockholders) instead of by the current creditor group.

**Asset valuation.** "Value" has such various meanings that it is desirable to state some of the chief ones. The differences between these meanings should be kept in mind in any discussion, because

**FIXED ASSET ANALYSIS****NATIONAL DAIRY PRODUCTS CORPORATION****CONSOLIDATED BALANCE SHEET**

December 31, 1951

*Working Capital Section***CURRENT ASSETS:**

Uash . . . . .	\$ 39,900,000
U. S. Government securities . . . . .	900,000
Accounts and notes receivable, less reserve	45,500,000
Inventories, lower of average cost or market . . . . .	117,500,000
	<u>\$203,800,000</u>

**CURRENT LIABILITIES:**

Accounts payable . . . . .	\$41,100,000
Accrued liabilities . . . . .	12,200,000
Provision for Federal income taxes . . . . .	39,200,000
Less — U. S. Government securities . . . . .	(39,200,000)
Notes due within one year . . . . .	300,000
Minimum sinking fund due within one year . . . . .	1,600,000
	<u>\$55,200,000</u>

*Fixed Capital Section***WORKING CAPITAL BALANCE**

\$148,600,000

**LONG-TERM DEBENTURE**

DEBT (including \$2,500,000 Canadian serial notes) . . . . .

\$105,700,000

**INVESTMENTS & OTHER ASSETS:**

Foreign subsidiaries	10,700,000
Less Reserve . . . . .	3,500,000
	<u>\$ 7,200,000</u>
Miscellaneous investments . . . . .	3,300,000
	<u>\$ 10,500,000</u>

**MINORITY INTEREST IN SUBSIDIARIES**

• 300,000

**PROPERTY, PLANT & EQUIPMENT:**

Land . . . . .	13,600,000
Buildings, machinery & equipment . . . . .	270,100,000
	<u>\$283,700,000</u>
Less Reserve for depreciation . . . . .	113,200,000
	<u>\$170,500,000</u>

**RESERVES:**Prior years' Federal and state taxes . . . . . 9,500,000  
Insurance and other . . . . . 2,000,000\$ 11,500,000**CAPITAL STOCK &****EARNED SURPLUS:**

Common stock (6,380,598 shares at stated value) . . . . .	54,400,000
Earned surplus . . . . .	159,500,000
	<u>\$213,900,000</u>

**PREPAID & DEFERRED ITEMS**

Items . . . . .	1,800,000
Good Will (at \$1) . . . . .	—
	<u>\$331,400,000</u>

\$331,400,000

Note: The original balance sheet is condensed here and figures rounded to the nearest hundred thousand. Company's annual report gives a condensed ten-year statement with a working capital section.

they explain many of the discrepancies existing between "valuations", made by different persons. Standards of valuation will vary with the purpose in each case. Because fixed assets are less liquid and are turned over only after long intervals or not at all, the problem of their valuation is more complex than that of current asset valuation—at least it was until LIFO value for inventories became important.

The first, and the most generally accepted, value, for balance sheet purposes—as stated in the discussion of balance sheet construction—is the original cost with a proper deduction, or reserve, for depreciation. This method of valuation provides a uniform and objective basis for valuation, even though its usefulness in measuring financial position after a period of violent change in the price level is open to question. Despite the virtues of the cost basis in preventing arbitrary manipulation and preserving cost for the measurement of subsequent profit, several disturbing possibilities, illustrated by the following questions, still remain:

1. Was the original purchase price inflated or more than the market value at the time of purchase?
2. Have repairs and ordinary maintenance been improperly added to the amount, as though they were additions and betterments?
3. Have betterments or improvements that have added to the assets been treated as repairs and not added to the book value of the property?
4. Are allowances or reserves for depreciation inadequate or excessive?

**Replacement value less depreciation.** These vexing problems explain one reason for the advocacy by some of a second valuation standard, that of present replacement value with due allowance for depreciation. If one is a stockholder, he is interested in the value of the properties on the basis of present construction costs. If the value represented is greater than original cost, a prospective competitor would be obliged to calculate so much greater investment of capital. These higher costs of securing capital enable those already in the field to take profits, not in proportion to original investment, but up to the point where the profits would yield a rate of return sufficient to induce potential competitors to make the increased investment necessary to enter the field, provided, of course, there are not already so many producers in the field as to result in excessive competition.

**FIXED ASSET ANALYSIS**

• The use of appraised values in the balance sheet is unusual except where the properties are being transferred to a new business entity. Sometimes they are used where (1) there is difficulty in obtaining from the corporate records information sufficiently accurate to justify the use of the latter figure in determining "value"; and (2) after there has been a large and apparently permanent change in the level of construction costs. After the rising prices of the first two decades of the present century, some argued that public utilities should be given the benefit of the higher prices by being allowed to use a reproduction or replacement, rather than an original, cost basis of valuation.<sup>1</sup> During the price inflation of the 1940's, cries of profiteering were raised by some who measured profits against an investment stated in assets bought and carried at lower price levels. •

Industrial corporations find other possible advantages in an appraisal of their fixed assets. In some cases, the appraisal may be desired because of the difficulties of interpreting the fixed asset accounts, which may show amounts on the books of the company only as one or more lump sums, which may represent an accumulation over a long period. In other cases, a permanent inventory (that is, a detailed record of the cost of the individual pieces of real estate, machinery, etc.) may have been kept, but the figures may be wholly unrepresentative of current price conditions. Possible reasons for revaluation or appraisal are as follows:

1. To provide the basis for a permanent fixed asset inventory, where none has been kept before.
2. For its effect on plant accounting. Inasmuch as depreciation charges are based on book cost, two changes will result from a change in that figure.
  - a. The operating costs will be increased if the appraised value is greater than former book value, and vice versa.

<sup>1</sup> Such persons frequently overlook the fact that increased earnings cannot remedy the position of the bondholders and preferred stockholders who supply so large a part of the funds of our utilities. Moreover, those who advocate revaluation usually fail to note the possible results under a falling price level. A policy of revaluation in such periods would tend to confiscate stockholders' interests and possibly reduce the margin of safety to bondholders to a point which would threaten the financial standing of the utilities. Such weakness might, in turn, prevent the financing of improvements or expansion essential to adequate service to the public.

Some believe that operating costs should be based upon current rather than upon historical prices. In any case, cost at a higher or lower price level of the past does not show the "economic cost" (purchasing power) at the going price level.

- b. The amounts of the depreciation allowances will more nearly equal the amounts required to replace the depreciated assets, if the basis for figuring is replacement cost. This point is particularly important after a period of rising prices. Depreciation allowances based on original cost may be quite inadequate to conserve the original investment at the subsequent higher price level.
- Nevertheless, the weight of accounting authority is now against any attempt to alter the record of asset cost or reflect "purchasing power" or "replacement" depreciation expense in the earnings.<sup>2</sup> Management may still have an appraisal made or make supplementary calculations outside of the regular statements because of radical price level changes.<sup>3</sup> Such data may have utility in policy-making and price decisions, in improving public relations, and in keeping the owners informed as to the economic realities of their position.
3. To serve as a basis for recapitalization, as by stock dividends.
4. To determine the present value of the fixed assets in the event of the sale of the business or its consolidation with others in a combination
5. To show the current condition in the event of financing, as in the case of a sale of securities.

<sup>2</sup> See Research Bulletins No. 5, "Depreciation on Appreciation," and No. 33, "Depreciation and High Costs" (1947), American Institute of Accountants. Further discussion is given in Chapter IX.

<sup>3</sup> For principles that should govern such data, "Price Level Changes and Financial Statements" by the Committee on Concepts and Standards Underlying Corporate Financial Statements of the American Accounting Association, *Accounting Review*, October, 1951, pp. 468-474. Occasionally data will be given outside of the statements, as in the annual report of the Georgia-Pacific Plywood Company, which stated that the fixed plant investment, exclusive of Timberlands, which showed a net book value of \$7,288,399 on December 31, 1951, would have "an appraised depreciated value in excess of \$18,000,000, a figure more nearly in line with their actual productive capacity."

6. To provide a basis for possible fire-loss adjustments. Under the present-day "co-insurance" clause, it is particularly essential to know current values, for otherwise, underinsurance may reduce the protection of existing policies.<sup>4</sup>
7. To provide data for property tax adjustments.

Some accountants, who are influenced by the reasons which have just been given, agree that revaluations may be made and introduced on the books provided original cost and applicable depreciation are not obscured. Where the appraisal results in an increase in the book value of the assets, the corresponding increase in the owners' equity is preferably reflected under some suitable descriptive heading, such as Unrealized Appreciation Arising from Appraisal of Fixed Assets. The titles Appraisal Surplus or Appreciation Surplus are less appropriate because of the unrealized status of the asset increase. The profit and loss surplus will not be affected and the increase will not be used as a basis for dividends (other than stock dividends). The persons making the appraisal and the method of appraisal should be clearly stated in the annual financial report of the company. There are concerns which devote themselves exclusively to appraisal work.<sup>5</sup>

**Market value.** Most frequently, the market value of the properties of a going concern as an aggregate bears no close relation either to original cost or to the cost of replacement less depreciation. The business is a profit-returning investment, and the investment market sets its value in proportion to its estimate of future profitability. If, for instance, the purchase of the properties of the General Electric Company or the Coca-Cola Company were contemplated, both book value and replacement value would be of secondary interest. The purchase price or market value of their properties would be determined by the prospects of income to be derived from ownership. From this viewpoint, the balance sheet, together with the earnings

<sup>4</sup> For a description of co-insurance, see R. Riegel and J. S. Miller, *Insurance Principles and Practices* (New York: Prentice-Hall, Inc., 3d ed., 1947) pp. 397-404.

<sup>5</sup> Inasmuch as appraisals are made only at infrequent intervals, if at all, they should be made when price conditions appear to be fairly stable, so that the valuation may continue to have usefulness for the statement reader for a maximum length of time. Revaluations made in the depth of the depression in 1932 and 1933, when prices were abnormal and unstable, appear to have been ill-advised in this respect.

statement, is merely an aid in making a forecast of the probable value of the properties as an investment. The market value of the stockholders' interest—and indirectly the value of the properties as a going concern—may be found by multiplying the market value of a share of stock by the number of shares outstanding.

**Liquidation values.** A fourth method consists of a valuation of the assets on a liquidation basis. This attitude is often taken by the cautious creditor who will venture only where he feels protected against the worst—a state of bankruptcy. It may be objected that such a basis is unfair to any business. Such an objection overlooks the natural difference in temperament between the various persons supplying funds to a business enterprise. A conservative creditor like the banker who takes but a small rate of return should not be expected to take disproportionate risks.

These different uses of the term "value" are not to be thought of as conflicting, but rather as the result of different viewpoints, each of which serves a different purpose.

• **Tangibles and intangibles.** The fixed assets fall into two general groups—tangibles and intangibles.<sup>6</sup> The usual examples of the latter group are good will, patents, copyrights, and, sometimes, franchise rights. These assets are neither physical goods nor evidences of property such as notes or bonds. These intangible assets may be valuable, but the value to be assigned to them is so much a matter of opinion that conservative businesses frequently eliminate them. Generally the analyst removes them from the total of assets before calculating the book value of the stockholders' rights. The resulting figure is, strictly speaking, "the net tangible assets available for the common stock" rather than "the book value of the common stock." The present common practice by major corporations of omitting intangibles or reducing them to a nominal \$1 means the two are ordinarily the same and the term "book value" is frequently used.<sup>7</sup>

<sup>6</sup> The accounting and financial, rather than the legal, usage of the word "intangible" is employed here. In legal and tax circles, "intangible" is applied to property rights evidenced by instruments, such as stocks, bonds, notes, and accounts, and the term "tangible" reserved for physical goods, such as real estate, machinery, and inventory.

<sup>7</sup> Where substantial sums have been paid for good will and trademarks, they may constitute "invested capital" upon which earnings will be allowed free from the excess profits tax. Thus, Bristol-Myers Company was reporting an invested capital in its balance sheet well under \$10 million at a time when it was claiming

In the balance sheet of National Dairy Products Corporation, for December 31, 1951, as shown above, the common stock appears at its stated value of \$54,400,000. When the Earned Surplus of \$159,500,000 is added to this amount, a total book value of \$213,900,000 is obtained. (A Deficit figure would have been deducted.) Because the Good Will is now stated at a nominal \$1, no deduction is necessary to arrive at a separate "net tangible assets for common stock" figure. A further deduction would have had to be made had there been any accumulated and unpaid preferred dividends, which are a claim upon the tangible assets prior to that of the common stock. Such an accumulation is often mentioned in the balance sheet in a footnote but not shown in the liability column because it becomes a liability only after declaration.

When the net tangible assets for the preferred stock is being computed, the claims of the preferred stock are not deducted and the total net worth is taken and a deduction made for the amount of the intangibles. In this case, the net worth does not include any preferred stock, as it was retired through the sale of low interest rate Debentures.

Should the net tangible assets for the bonds be desired, the sum of the bonds and the net worth is found and the intangible assets deducted. This practice is followed even though its effect is to treat all the debts other than the bonds as prior claims, which they clearly are not when, as in this instance, the bonds are debentures. Should this practice, which is commonly followed in security analysis, give a substantially misleading figure because of this implication of priority, the resulting figure should be amended so as to give a comparison of net tangible assets with all of the debt that stands upon a common ground of priority.

\$27 million for excess profits tax purposes; Lambert Company reported only \$6 million while claiming between \$35 and \$48 million (*Barron's*, February 9, 1942, p. 12). Similarly, where depreciation expense allowed for income tax purposes has differed materially from the amounts reported to stockholders, invested capital in the balance sheet will differ from the base allowed for excess profits tax purposes. One report stated that American Steel Foundries had an invested capital allowable for tax purposes around \$55 million, or more than \$46 per share, at a time (Sept. 30, 1941) when the balance sheet showed a book value of \$28.28 per share (American Institute of Finance, *Economic and Investment Bulletin*, Feb. 7, 1942).

To summarize the preceding:

1. Book value and net tangible assets available for common stock = \$213,900,-000. ( $\$54,400,000 + \$159,500,000$ .)
2. Net tangible assets per share of common stock = \$33.53. ( $\$213,900,000 \div 6,380,598$  shares.)
3. Net tangible assets available for preferred stock. None outstanding. (Total net worth, including preferred, divided by number of preferred shares outstanding.)
4. Net tangible assets for debenture bonds = \$319,600,000. ( $\$213,900,000 + \$105,700,000$ )
5. Net tangible assets per \$1,000 bond = \$3,024. ( $\$319,600,000 \div 105,700$ .)

Another ratio, which will be discussed later in this chapter, is the ratio of working capital to funded debt, or working capital per \$1,000 bond.

6. Working capital per \$1,000 bond = \$1,406. ( $\$148,600,000 \div 105,700$ .)

In the preceding calculations, two problems that frequently are present did not arise. When preferred stock is one of the claims that precede the common stock, it is usually regarded as a prior claim ahead of the common for the amount of its par value plus any accumulated and unpaid dividends if the stock is in arrears. Where, however, the preferred is without par value or has a nominal par value, it is treated as a prior claim for the amount of its priority in an involuntary liquidation. Thus, if a preferred stock paying a \$2 annual dividend has a par of but \$10 but a priority of \$50 in involuntary liquidation, it is best treated as a 4 per cent \$50 par preferred. Call price or priority in voluntary liquidation is ordinarily ignored in these calculations on the principle that going-concern rather than liquidation values are involved.<sup>8</sup>

With the growing practice of showing surplus reserves in the net worth section, it will be easier to find and include them in calculating

<sup>8</sup> In analyzing capital structure (covered in next chapter) Graham and Dodd propose that the preferred stock claim be taken at the highest of (a) par value plus arrears, (b) call price plus arrears, or (c) average market price. The use of market price is objectionable for preferred, as for bonds, because it would introduce annual variations bearing no necessary relation to balance sheet figures and might even result in the absurdity of an apparently decreasing preferred claim because of a falling market price caused by falling earnings and lowered credit standing without any change in the claim itself. Benj. Graham and D. L. Dodd, *Security Analysis* (New York: McGraw-Hill Book Co., 3d ed., 1951), p. 184.

the book value of the common stock. In the interests of uniform comparisons, surplus reserves, even though placed outside the net worth section in the published balance sheet, should be analyzed as a part of surplus. When the character of the reserve is in doubt, conservatism would dictate its exclusion from net worth; but if such an item is of material amount, its presence and possible effect, as on the book value of the common stock, should be noted either in the discussion or a footnote.

**Real estate.** In the balance sheet of an individual corporation, there is frequently one large amount labeled "Plant and Equipment," or "Real Estate, Machinery, etc."<sup>9</sup> Occasionally, the title is very broad and intangibles are included under it, which is an especially bad practice. In the better type of balance sheet, not only are intangibles shown apart, but the real estate or land and buildings are shown separately from the other fixed tangible property. An example of separate treatment of the several items of the Property account appears in the balance sheet of:

COMMERCIAL SOLVENTS CORPORATION

PROPERTY PLANT AND EQUIPMENT

December 31, 1950

(thousands of dollars)

	<i>Acquired before 12/31/32</i>		<i>Acquired after 1932</i>	
	<i>Gross</i>	<i>Reserves*</i>	<i>Gross</i>	<i>Reserves</i>
Land	75	75	223	
Buildings	1,632	1,632	5,855	1,276
Equipment	4,784	4,784	18,464	5,876
Office furniture	62	62	343	141
Uncompleted			380	
Emergency facilities			2,283	2,283 †
Totals	6,553	6,553	27,548	9,576
Total property, plant and equipment			34,101	
Less depreciation reserves			16,129	
Net property			17,972	

\* Book value reduced to \$1 by charge to earned surplus, Dec. 31, 1930. Additions in 1931 and 1932 similarly charged off.

† Fully amortized as of Sept. 30, 1945.

<sup>9</sup> This heading should include only fixed assets used in operations. Fixed assets no longer in use should be stated separately and are characteristically valued at liquidation value inasmuch as they are no longer elements of the going concern and are to be disposed of as soon as that can be done advantageously.

It is further desirable that the land be shown apart from the buildings. Land is not subject to depreciation allowances as buildings are. Land is valuable as a site; the value of buildings rests in their adaptability to use. The value of a building may decrease while the value of the site is increasing. Land may be held for the sake of its natural resources, such as minerals, timber, water power, or other rights to be obtained through the ownership of the land. It is desirable that assets subject to depletion, such as mines and timberlands, be shown separately.

Location and utilization will give the land its value.<sup>10</sup> In the case of a store property, location will determine its convenience for customers. Traffic flow, transportation, parking facilities, and the presence of other shops are examples of pertinent influences. For a manufacturing plant, location will be a matter of transportation facilities with respect to materials and markets and accessibility for workers. Even though the analyst may find it unnecessary to check closely the current value of the property, he may find it useful to consider the probable relation of store or plant location to future success.

In the valuation of buildings, it should be noted that the present value of two buildings that originally cost the same to construct may vary later with location, age, type of occupancy, and (in case of the liquidation of a business) the adaptability of the structure to other uses. The first two factors are readily recognized, but the latter two are sometimes overlooked. A building constructed for theatrical purposes or for a banking house is specialized and cannot be used economically for another purpose unless virtually rebuilt. A more general type of building, such as an office building or small store, can usually, when the tenants are unsuccessful, find new occupants much more easily.

Lack of adaptability of the banking structure, together with the extreme conservatism of some bankers, helps to explain why the value of buildings is sometimes understated in the bank balance sheet. The building's book value may have been reduced year by year until it materially understates the real estate item and so the surplus. Such procedure may be detected by the analyst who will study this asset from year to year.

<sup>10</sup> The valuation of land giving title to mineral deposits is considered later in the chapter devoted to mines (Chapter XVI).

An error that must be guarded against is the stating of the value of the real estate less any mortgage, thereby showing only the net equity or difference in the assets—a procedure which is clearly misleading. A building worth \$50,000 free and clear is quite different from a \$120,000 building with a \$70,000 mortgage on it. The former would, in the event of a forced liquidation of the business, in practically every case yield a larger amount for the general creditors.<sup>11</sup>

**Leaseholds.** Leaseholds are sometimes found instead of real estate, or in addition to that asset. A leasehold may be purchased from a person who has taken a lease (become a lessee) for a period of years at a rental that, at the time of purchase of the leasehold, is less than the character of the property justifies. The purchaser of the leasehold will pay to the lessee the discounted, or present, value of this rental saving. Such an asset must gradually be extinguished as the expiration date of the lease approaches.

This situation is similar to that of the holder of a long-term lease who erects a building on leased land. Such property, being fixed to the land, becomes the property of the landowner. Such a building with its fixtures must gradually be written off over a period not longer than the life of the lease, unless a special agreement has been made by the landlord (lessor) to repay the lessee for the building he has erected. The amount written off annually is virtually so much rent, and the building is in effect a payment to the landowner for the use of his land site, unless it is assumed that the building will be without value by the time the lease expires. Where the buildings are listed among the assets, without an item of land or real estate, inquiry should be made as to the actual situation.<sup>12</sup>

**Equipment.** Equipment and furniture should be stated separately from the building figure. They are usually subject to a more rapid rate of depreciation than the building. Moreover, machinery and

<sup>11</sup> Nevertheless, such treatment is found occasionally, as in the annual report of Sears, Roebuck and Company for the year ended January 31, 1942. After reporting other land and buildings, the Equity in Properties for January 31, 1941, was reported showing first a deduction for Mortgages and then for Reserve for Depreciation from the gross value of Land and Buildings. One danger is that investment services may show only the net figure in their reporting or that clerical help may compute ratios based on the net asset figure and omit the debt from liabilities.

<sup>12</sup> S. L. McMichael, *Leases, Percentage, Short and Long Term* (New York: Prentice-Hall, Inc., 1947); also *McMichael's Appraising Manual* (New York: Prentice-Hall, Inc., 4th ed., 1951), Chap. 33, "Leasehold Appraisals."

other equipment, especially where highly specialized, may be of little more value than so much scrap in the event of liquidation, whereas the building may be rented or sold for other purposes. A separation of these items also makes possible a comparison of each with the maintenance, repairs, and depreciation allowance figures and an intelligent estimate as to whether the different classes of property are being properly cared for.

The mercantile or bank credit man who is interested in the possible resale or second-hand value of the equipment in the event of liquidation will ask the following questions as he studies the item:

1. Is the equipment of a standardized type that will give it ready marketability, or is it of unusual size or specially adapted for purposes of this one concern? To be considered "standard," the equipment should, of course, be sufficiently modern to meet the current standards of efficiency.
2. Is it widely enough used to offer the likelihood of a broad market?
3. Is it located at or near a potential market?
4. What is the likely physical condition of the equipment? Is it well preserved? On the one hand, the equipment of construction contractors is frequently exposed to severe weather conditions and allowed to deteriorate; whereas, on the other hand, certain types of machinery, such as those that are used in a cotton textile mill, are ordinarily kept in an excellent state of repair.

Occasionally, appraisals are made that greatly help the analyst to estimate the current value. An appraisal is sometimes based on "condition, type, and service" without regard to age. Such an appraisal may overlook the fact that condition based on operating efficiency is misleading, because mechanical efficiency is usually fairly good up to the time of retirement. Book value, however, should reflect from the start the approaching end; otherwise, an unfair burden will be thrown on the expenses of the year in which the replacements occur.

**Present value based on general price levels.** Where it is desired to form only a rough estimate of the present cost of replacing certain structures and equipment, the device of index numbers may be helpful. These numbers, as their name implies, show relative price change from month to month and year to year. They are calculated and

published by various agencies. One of the best-known indexes in this country suitable for the purpose of interpreting the fixed property account is the index of construction costs published by the *Engineering News Record*.<sup>13</sup> The figures are shown in the table below. Costs were relatively stable during the years 1923-1930; variable since.

INDEX OF CONSTRUCTION COSTS  
(*Engineering News Record*)

1913 = 100

1914 . . . . .	89	1924 . . . . .	215	1934 . . . . .	198	1944 . . . . .	299
1915 . . . . .	93	1925 . . . . .	207	1935 . . . . .	195	1945 . . . . .	308
1916 . . . . .	130	1926 . . . . .	208	1936 . . . . .	206	1946 . . . . .	346
1917 . . . . .	181	1927 . . . . .	206	1937 . . . . .	235	1947 . . . . .	413
1918 . . . . .	189	1928 . . . . .	207	1938 . . . . .	236	1948 . . . . .	461
1919 . . . . .	198	1929 . . . . .	207	1939 . . . . .	236	1949 . . . . .	477
1920 . . . . .	251	1930 . . . . .	203	1940 . . . . .	242	1950 . . . . .	509
1921 . . . . .	202	1931 . . . . .	181	1941 . . . . .	258		
1922 . . . . .	174	1932 . . . . .	151	1942 . . . . .	276		
1923 . . . . .	214	1933 . . . . .	170	1943 . . . . .	290		

These indexes measure the relative prices in the given years. The probable cost of reconstructing in 1950 a building built in 1925 would have been as the relation of the index 509 to 207, or an increase of 146 per cent. If it is known in which years the property was constructed, a rough approximation in terms of current building costs may be made. Unfortunately for the outsider, the property account of most large concerns is the net result of many additions and subtractions over a period of years, and the allocation of the parts of property to different years is impossible. The method is chiefly useful to the management in making estimates, and to the outside analyst in those cases where he knows that the property was chiefly constructed in a few major units in certain years. The method assumes that the original figure was the market or fair cash value of the property.

**Patterns, dies, and plates.** Patterns, lasts, models, dies, and drawings are shown by many industrial corporations among the fixed

<sup>13</sup> The index weights steel 38, lumber 17, cement 7, and labor 38. Convenient sources of these monthly data are the *Standard Trade and Securities Service* and the *Survey of Current Business*. Both sources publish various other construction cost indexes.

assets. Their value is likely to be very temporary and should not be large. The same is true of plates and cuts found in the asset column of publishers' balance sheets. If the product is a success, the first printing will usually yield sufficient revenue to repay the outlay for plates, and it would be conservative to write their book value down to a nominal amount. If the product is unsuccessful, the value of such items is so questionable as to make their inclusion among the assets poor procedure. These items as a class are more of the nature of deferred expenses than of fixed assets.

**Investments.** Investments usually consist of securities, which sometimes can be sold without disturbing the regular operations of the business or which may be useful as collateral for securing a loan. If either of these two situations exists, the securities serve as valuable support to working capital. When the holdings are temporary investments, they will generally appear among the current assets rather than as "Investments" among the fixed assets. The analyst may profitably ask the following questions as he examines this asset:

1. How readily may the investments be sold? Securities on the stock exchange will have an advantage. Unlisted stocks of small companies owned by only a few persons will usually be at the other extreme in marketability.
2. Is the value of these investments likely to change greatly with changes in business conditions? The more speculative an investment, the less it can be depended on when making a judgment of the future.
3. What is the present value of these investments?
4. Are the investments self-supporting? In other words, do the investments yield sufficient income to pay the expense of carrying them? The investment income reported in the profit and loss statement will show only interest and dividends received.<sup>14</sup> The latter figure may be a very poor measure of the actual earnings of stock-

<sup>14</sup> Since 1925 E. I. du Pont de Nemours & Company has followed the unusual practice of adjusting the book value of its substantial investment in General Motors Corporation common stock so as to reflect substantially the book equity as it is stated in the consolidated balance sheet of the latter at the end of the preceding year. The adjustment appears as a surplus change, and the reported net income includes only the dividends received. Other companies known for their substantial investment holdings are Allied Chemical and Dye Corporation, Canadian Pacific Railway Company, Gulf Oil Corporation, and Union Pacific Railroad Company.

holdings, so that an answer to the question proposed here makes necessary a detailed list of holdings and suitable statement material about the companies concerned.<sup>15</sup> Where the property yields no present income but is held for future developments, as in the case of undeveloped mining or timber properties, it is usually impossible to form any reasonable estimate of value, except when a disinterested appraisal of recent date is available.

5. Is the investment in allied or affiliated companies primarily for the purpose of securing concerted action? In such a case, the benefits, if any, may be indirect rather than from any direct revenue in the form of interest and dividends.

6. Is the investment in subsidiary companies? Where the stock of subsidiary companies is held, it generally is desirable to secure the statements of these companies and to read them in connection with those of the parent company. A subsidiary may be used as a cloak for the concealment of either profits or losses. Investments in subsidiaries may sometimes be regarded as liabilities—for example, where the subsidiary shows a loss each year. It is customary, where the subsidiaries are important, to combine their statements with those of the parent company, as will be discussed later in connection with holding companies (Chapter XIX).

**Accounts receivable from subsidiaries.** Inasmuch as a company frequently cannot press a subsidiary for the payment of amounts owing from it without endangering its investment, an account receivable from a subsidiary is unlike an ordinary account, and may constitute a more or less permanent advance. Such sums are likely to be harder to collect in a time of stress than the average account receivable. Amounts due from subsidiaries and amounts due from allied or affiliated companies are usually listed in the fixed section of the balance sheet rather than under current assets.

The following illustration shows the possible importance in analysis of this parent-subsidiary relationship:

<sup>15</sup> The Securities and Exchange Commission requires that corporations registering new issues (Form S-1) or making annual reports (Form 10-K), because their issues are dealt in on a registered stock exchange, submit detailed schedules of their investments. Book value, basis of valuation, and, where possible, current market value, are required for both marketable securities and other security investments, when they amount to more than a certain per cent (usually 15) of total assets.

	PARENT BUSINESS			
	<i>Assets</i>		<i>Liabilities</i>	
	1950	1951		
Cash . . . . .	\$ 30,000	\$ 20,000	Accounts Payable	\$ 60,000
Accounts Receivable . . . . .	30,000	40,000	Capital Stock . . .	100,000
Merchandise . . . . .	80,000	100,000	Surplus . . . . .	20,000
Plant . . . . .	40,000	40,000		20,000
Stock in Subsidiary . . . . .		50,000		
	<u>\$180,000</u>	<u>\$250,000</u>		
				<u>\$180,000</u>
				<u>\$250,000</u>

In the preceding statement, the business has apparently increased its net worth \$50,000. The change is accompanied by the acquisition of \$50,000 worth of stock. But the analyst should seek more information from the balance sheet of the subsidiary.

If the figures of the latter are examined and its debts are subtracted from the stated value of the tangible assets (\$56,500 — \$42,500), the net tangible assets available for the stockholders are

#### SUBSIDIARY COMPANY

DECEMBER 31, 1951

	<i>Assets</i>		<i>Liabilities</i>	
Cash . . . . .	\$ 500	Accounts Payable		\$42,500
Accounts Receivable . . . . .	24,000	Capital Stock . . .	\$50,000	
Merchandise . . . . .	20,000	Less Deficit	12,000	38,000
Plant . . . . .	12,000			
Patents and Good Will . . . . .	24,000			
	<u>\$80,500</u>			<u>\$80,500</u>

but \$14,000. In view of the lack of working capital, a possible failure may reduce this still further. It is not improbable that some of the accounts receivable of the parent business are accounts payable of the subsidiary. If, as is not infrequently the case, the owners of the stock attempt to protect their investment by further advances, they may see not only the original \$50,000 but an additional sum lost on the subsidiary. The change in the condition of the parent company, at least in so far as can be learned from the balance sheet, is certainly not improved; and, although the margin of safety to creditors is bettered nominally, it is actually much weaker in the later year.

**Funds.** Sinking funds and other sums set aside for special purposes are not usually items of major importance. They represent sums set

aside to meet some liability on the opposite side. For example, a sinking fund for the purpose of retiring outstanding bonded indebtedness will ordinarily be spent almost as rapidly as accumulated for the redemption of the bonds in question. If these funds are at all considerable, an attempt should be made to learn in what form they are invested. They should be in some safe form and of such a nature that they will be available when the time comes for them to be used.

**Treasury securities.** Treasury securities are stocks and bonds of the corporation itself, once issued but now held in the treasury and not yet canceled. Either bonds or stocks that are merely authorized and unissued are not regarded as treasury securities even though they may be readily available for raising cash. Once repurchased, treasury bonds are not likely to be resold. More often they are held to meet future sinking fund requirements. In emergencies, both treasury and unissued bonds have been used as collateral for obtaining loans. The probable market value of such securities may be studied where the financial condition indicates a possible need for financing.

Treasury stock is sometimes shown as an asset but more usually as a deduction in the net worth section. The corporation may wish to preserve the record of cost of treasury shares repurchased, in which case the total is subtracted from the net worth rather than subtracting various parts of the cost from the capital stock, paid-in surplus, and earned surplus accounts.<sup>16</sup> Three reasons may exist for this treatment rather than the cancellation of the stock and its elimination:

1. *Repurchase limited by surplus.* Because repurchase of the stock of the corporation might injure the position of creditors, the law of the state of incorporation may forbid purchases in excess of earned surplus.<sup>17</sup> Sometimes a debt agreement will restrict treasury stock purchases to an amount not greater than earnings retained subse-

<sup>16</sup> Were the stock repurchased eliminated, the capital stock account and paid-in surplus accounts would be reduced by the amounts originally paid for the reacquired shares. Any excess paid over subsequent repurchase cost would be shown as capital surplus or more clearly as "Excess of issuance price over cost of reacquired shares."

<sup>17</sup> As an example, the Business Corporation Act of Illinois forbids a corporation to purchase its own shares when it will reduce its net assets to less than the sum of its stated capital, paid-in surplus, any surplus arising from unrealized appreciation or revaluation of its assets, and any surplus arising from surrender to the corporation of any of its shares.

quent to the borrowing. If the cost of the treasury stock is shown, it is simpler to note whether or not this rule has been observed. Similar information could be given by a suitable balance sheet footnote. If stock with par value were selling at a sufficient discount, its repurchase by the corporation would create additional surplus to permit further purchase. (The accountant classes such surplus as unearned.) In fact, if stock could be bought for one half of par, treasury stock purchases would create surplus equal to whatever amount was expended on the stock purchases. Sound practice would dictate that treasury stock purchases should be limited to an amount equal to surplus resulting from ordinary earnings, as long as there is any substantial debt in existence. Even then retained earnings might be unavailable to whatever extent they were needed to permit debt retirement.

2. *Temporary holdings.* When minor amounts of stock are purchased for some temporary purpose, such as to provide for an employees' stock purchase plan, it is more convenient to show the item Treasury Stock at cost than to have recurring adjustments in the common stock and surplus accounts.

3. *To avoid unusual surplus decreases where stock is of nominal value.* When stock has a nominal value, as is often the case with no par stock, any purchase produces a decrease in surplus for the amount paid over and above the nominal stated value. Deductions from the stock and surplus accounts, especially the latter, may disconcert the unwary reader—a result which is avoided by carrying the cost on the asset side as treasury stock. Thus, a share purchased for \$25 could appear as treasury stock at that figure; but if deducted from the stock account when stock had a stated or par value of one dollar, it would reduce the account only by that amount and the surplus by \$24. Consequently, a continued policy of preferred or common purchases might, by reducing surplus, make a bad impression upon those who attach too much weight to that figure, as compared with earnings per share or with book value—both of which might be increased by the process. By showing the purchase as treasury stock, this continuing drain on surplus would not appear unexplained. When the process was complete, a major operation would remove the treasury stock and reduce net worth with a suitable explanation attached. In the meantime, the analyst for his own pur-

poses can always make the deduction of treasury stock from net worth in preparing the balance sheet for ratio or other study.<sup>18</sup>

**Intangible assets.** The intangible assets, as previously stated, consist of such items as patents, copyrights, trademarks, franchises, and good will. Although the analyst must form his own opinion as to the value of these items, he will be interested in learning their origin. They may represent cash outlays, as when a corporation or an individual purchases an ownership equity in another business for more than the amount of the net tangible assets. They can be more or less arbitrary values introduced at the time of a promotion. Frequently, major corporations reduce their balance sheet valuation of the intangibles to a nominal sum as low as \$1. The retention of the item in this manner reminds the reader of what may be very valuable intangibles, and, at the same time, gives him an impression of conservatism.

Patents and copyrights represent monopoly rights granted by the government. Letters patent give an inventor the exclusive right to manufacture and sell his device for a period of seventeen years, which time may be extended only by an act of Congress. These patents can be said to have value to a going business only if they enable it to earn a more than ordinary rate of return upon investment. When value does exist, it may be kept alive beyond the seventeen-year period by the discovery of important improvements which can be patented. Sometimes, especially in the case of consumers' goods, a valuable trade name or good will may be developed to give a quasi-monopoly position and correspondingly high profits that will continue after the expiration of the protected period. The patents may, however, become valueless before that interval has elapsed, through being superseded by improved devices. Patents are written off over the period of their legal life, or more quickly when they appear to be without value.

<sup>18</sup> The discovery that Allied Chemical & Dye Corporation was including a substantial amount of treasury stock as Marketable Securities under current assets led the New York Stock Exchange to threaten to bar its stock from that market until fuller information was given out. On December 31, 1933, the company showed 187,189 shares of common stock as an asset at \$25,837,300 or about \$138 per share. The terms of the agreement under which the Exchange agreed to retain the company's issues on the stock list is instructive in what corporate reports should show. (*Moody's Industrial Supplement*, July 12, 1933)

A copyright is the exclusive right, protected by the Federal statutes, of an author or his assignee to publish and print his literary or artistic work. This right is granted for a term of twenty-eight years, and it may be renewed for another twenty-eight years if application be made within one year of the expiration of the original copyright (Act of March 4, 1909, Chap. 320, §23). The actual life—that is, the period during which the right has value to its owner—is usually shorter than the legal life of the right. Ordinarily, the first edition is made to bear the cost of the copyright and see the asset extinguished from the balance sheet.

Trademarks have value as they become associated in the public mind with merit so as to enable the owner to make sales with less than ordinary selling costs or at more than a normal rate of profit.<sup>18</sup>

**Value of good will.** Good will is the intangible asset most frequently found in the balance sheet. To illustrate its use, assume a property with a net investment in tangible property of \$500,000 and average earnings of \$100,000. If the normal return in this line of business is 10 per cent, clearly the market value of the business is \$1,000,000. In the event of sale or merger, the owners would expect to receive this amount in either cash or securities. The balance sheet of the purchaser might appear then:

<i>Assets</i>	<i>Liabilities</i>
Tangible Property (in detail)	Capital Stock . . . . . \$1,000,000
Patents, Trademarks, and Good Will . . . . .	\$ 500,000
	500,000
	<hr/>
	\$1,000,000

Good will, then, where it exists, might be defined as the capitalized value of earning power in excess of the normal return on the net investment in tangible property. Good will is not spoken of, as a rule, except in connection with competitive businesses. Furthermore, it is incorrect to speak of the asset "good will" as existing in a business that does not earn more than a normal rate of return.

The arithmetic of good will valuation may follow the formula suggested by the preceding figures:

<sup>18</sup> Their cash value is illustrated in the lease, in 1931, by International Shoe Company of the trade names "Dorothy Dodd" and "Queen Quality" with the option to purchase. In 1937 the company exercised the option at a reported price of \$100,000.

1. Capitalize the earnings at a fair rate of return to obtain a valuation for the business:

$$\$100,000 \div 10\% = \$1,000,000.$$

2. Subtract the value of the tangible assets from this valuation of the business as a going enterprise to find the value of the good will:

$$\$1,000,000 - \$500,000 = \$500,000.$$

Or, if the method suggested by the definition is followed:

1. Find the amount which would constitute normal earnings by multiplying the tangible investment by a fair rate of interest:

$$\$500,000 \times 10\% = \$50,000.$$

2. Determine "excess" earnings by subtracting the "normal" earnings from actual earnings:

$$\$100,000 - \$50,000 = \$50,000.$$

3. Capitalize the excess earnings at the fair rate of return to find the value of good will:

$$\$50,000 \div 10\% = \$500,000.$$

Because these two processes are mathematically equivalent, the results obtained should be the same.<sup>20</sup>

Another method of valuation which does not follow the rule of "capitalizing above normal profits to find good will" has been stated as follows: "...the value of 'good will' will be the sum of the net income earned by the property for, say, three (or more, as may be desired) consecutive years immediately preceding the appraisal of the property." Under such a rule, a business with a nominal return of only 1 or 2 per cent would have a "good will" as well as a property earning 20 per cent.

<sup>20</sup> This statement is based upon the customary assumption that good will has a perpetual life and accords with the income tax rule, which does not permit amortization for tax purposes. W. A. Paton and A. C. Littleton, however, state: "This position is unsound.... There is ample evidence in available business histories to show that extraordinary earning power cannot be expected to persist indefinitely." *An Introduction to Accounting Standards* (Chicago: American Accounting Association, 1940), pp. 92-93. If this less usual assumption is adopted, then the second approach should be employed and the above-normal income valued as an annuity with a limited life, like an exhaustible mine, whose value should be recovered during its life. The valuation method for the latter is discussed in Chapter XVI.

If two properties, with an appraised value of \$1,000,000 each, showed average earnings of 5 and 10 per cent, respectively, the following results might be obtained:

	<i>A</i>	<i>B</i>
Plant Value . . . . .	\$1,000,000	\$1,000,000
Good Will (3 years' earnings) . . . . .	150,000	300,000
Total Valuation . . . . .	<u>\$1,150,000</u>	<u>\$1,300,000</u>

Such a method of appraising a business could hardly be fair except by the merest chance.

Intangibles are likely to have little value in liquidation, and, in analysis, are often omitted from the list of assets. They can be said to have value only when the business is earning a profit in excess of the normal return for the amount actually invested in tangible property. Any excess earnings may be but the reflection of temporary factors, either external, as in the case of a passing business boom, or internal, as in the case of a skillful management that brings profits to the business beyond the amount it takes from the business in charges for its services. Where the valuation of the intangibles has been based on the *prospect* of excess return over normal without any record of past performance, as is usually the case in promotions, it is necessarily subject to error, and its reliability will be dependent upon the degree to which the problem is susceptible of accurate forecast and upon the expertness of the appraisers.

**Going concern value.** Formerly, some states allowed public utilities to add an intangible item of "going concern value" (not shown in the balance sheet) to their tangible asset investment in arriving at the valuation upon which they should be allowed to earn a fair return. Where carefully defined, it consisted of:

1. Operating losses occurring during the initial part of the utility's existence, before it attains the condition of normal operation, plus
2. Any losses incurred, or any deficiency in net earnings below a fair return on actual investment, during the initial period usually required for the development of the property to normal operation.<sup>21</sup>

Good will is not allowed as an element of value for utilities because the underlying theory of regulation is to permit only a fair or normal rate of return upon tangible investment taken at cost.

<sup>21</sup> *Accountants' Handbook*, ed. by W. A. Paton (New York: Ronald Press, 2d ed., 1932), pp. 803-805.

The foregoing concept of going concern value is not ordinarily used in the utility field today. Instead the utility is permitted to include among the construction costs of its tangible property, interest upon investment during the period of construction. Nevertheless, this idea is useful in explaining why a bonus in excess of the value of the tangible assets without much regard to earnings is sometimes paid especially in the purchase and sale of small businesses. In the case of a sale of a professional practice, the value of the business may even be related to gross revenues rather than net income.

This highly specialized use of the term "going concern value" is not to be confused with the more common broad usage to mean the total value of an enterprise as a going concern. This latter concept of "enterprise value" includes both the ordinary tangible assets and the good will without regard to whether it is reflected in the accounts. On the other hand, if a business were liquidated, many of its assets might have to be sacrificed for less than their cost, so that the sums realized would be materially less than shown in the balance sheet. For that reason, accountants state that the accounts are kept on a "going concern" assumption even though they do not attempt to reflect current, or going, asset values because of the common rule of carrying assets at their "cost."

It is probable that the narrower, public utility concept of going concern value is the basis for the second method of valuing good will mentioned above. The argument might be advanced that any new business would be obliged to operate without profit for a time, and, therefore, when buying an established business, the purchaser should be willing to pay a sum equal to a certain number of years' profits in addition to the value of the tangibles. The method is unsatisfactory, however, in valuing an ordinary competitive business, because such a business is only valuable for what it can produce in the way of income, except for such value as the assets might have in liquidation.

The assets themselves are kept on a basis that is intended to represent their going concern value rather than their liquidation or scrap value. In a competitive economy, the rate of return for ordinary businesses would be expected over the long run to be only sufficient to induce investment. But accounting conventions, as we have seen, are not kept to reflect current market or replacement values. Consequently, in the case of a sale of a business, these latter values

rather than book values would be the base from which normal earning power would be measured to find any excess return indicative of good will. The same point must be recognized in interpreting published reports of earnings. They will often appear high or low relative to book investment, because the latter figure is low or high in relation to the current worth of the assets included.

## CHAPTER VII

### Analysis of Fixed Liabilities and Ownership Interest

Opposite the fixed assets will appear the more permanent sources of funds. These are the fixed liabilities and the ownership items, which are thought of as furnishing the working capital and the fixed assets. Any reserves found in this section should be classified according to their nature, as outlined in Chapter II. "The Construction of the Balance Sheet."

Fixed liability reserves are ordinarily of minor importance save in the case of insurance companies.<sup>1</sup> Of growing importance for some concerns has been the Reserve for Pensions. This liability has to be studied because, when first installed, a pension system often creates a large liability for past services of employees that is not shown in the balance sheet. The usual expectation is that this deficiency will be liquidated as the corporation contributes in subsequent years to a pension fund. Footnotes will often disclose the amount of this deficiency in the liability as stated, which may be studied as a burden upon net worth and future earnings. Prospectuses may report these amounts when they do not appear in ordinary balance sheet footnotes. In some cases they represent substantial amounts relative to net worth. On the other hand, when this liability can be funded by setting aside sums deductible from taxable income during years in which the corporation is subject to excess profits taxes, the burden upon earnings may be moderate.

Surplus reserves are usually to be associated with conservative financial management. A board of directors that uses this means to protect the surplus from dividend declarations is building up the owners' investment and increasing the margin of protection to

<sup>1</sup> The reserves of insurance companies are discussed in Chapter XVIII, which is devoted to that type of company

creditors. It must be remembered that in some cases surplus reserves, such as, for example, the sinking fund reserve, are compulsory because of the provisions of a bond indenture. Such a reserve, unlike the optional reserve (for example, the reserve for contingencies), affords no clue to the temper of the financial management.

**Capitalization.** Capitalization is given different meanings by different writers.<sup>2</sup> The most general meaning given to it is the par value of outstanding securities; that is, stocks and bonds. In this sense, a corporation will normally own property in excess of its capitalization. The analyst seeks to determine whether the capitalization is in fair proportion to the properties owned.

Inasmuch as the common purpose of examining the capitalization is to note the proportion of stocks to bonds, it is apparent that the total capital structure including surplus is more significant. Any comparison of the amount of stock alone to the funded debt without regard to surplus is to ignore what is frequently a very important part of the net worth, which gives protection to the creditors of the business. The consideration of surplus has become especially important as a result of showing capital stock at a nominal stated or par value.

As indicated in the preceding chapter, study is facilitated by the elimination of intangibles before capital structure comparisons are made. They are subtracted from the net worth. The capital structure is then stated as it would appear in a balance sheet free from intangible assets.

Because the security owner is interested in the enterprise as a going concern rather than as a liquidated business, his attention will frequently center on earnings rather than on property valuations, although this is less true in the case of bondholders and creditors in general than of stockholders. Common stock sometimes has little or no tangible property behind it and is of value only in proportion to the present and prospective income it yields.

The capital structure of the National Dairy Products Corporation, the balance sheet of which was shown at the beginning of the preceding chapter, would appear as follows:

<sup>2</sup> For a discussion, see H. G. Guthmann and H. E. Dougall, *Corporate Financial Policy* (New York: Prentice-Hall, Inc., 2d ed., 1948), pp. 74-75.

	<i>Amount</i>	<i>Per Cent</i>
Debenture Bonds .....	\$105,700,000	33%
Minority Stockholders' Interest .....	300,000	—
Common Stock .....	54,400,000	17
Earned Surplus .....	<u>159,500,000</u>	<u>50</u>
Total .....	<u>\$319,900,000</u>	<u>100%</u>

Such a presentation when used for intercompany comparison may not be wholly satisfactory if some of the companies have bank loans among their current liabilities. This is particularly true when the bank loans are semi-permanent rather than a seasonal item. When bank debt is present for some time, the corporation is likely to fund it into a long-term bond issue. In cases of this sort, which are the exception among large industrials, the analyst may prefer to restate the capital structure proportions to include such semi-permanent bank debt, even though it appears as a current liability. Otherwise, he may have a paradoxical financial picture of a capital structure that shows the company with a weaker position made to appear the stronger because of the ignored bank debt.

Thus, a corporation in the tobacco industry showed a decidedly lower proportion of long-term debt to net worth than its competitors on the basis of a conventional capital structure analysis. With bank loans included in the picture, however, its proportions were seen to run close to those of its competitors.

	<i>Conventional Capital Structure</i>		<i>Including Current Bank Loans</i>	
	<i>Corporation</i>	<i>Competitors</i>	<i>Corporation</i>	<i>Competitors</i>
Bank Loans—Current				
Long-Term Loans .....	21%	34% }	49%	46%
Preferred Stock .....	20	11	13	9
Common Stock and Sur- plus .....	<u>59</u>	<u>55</u>	<u>38</u>	<u>45</u>
	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

In this industry, heavy current debt was made possible by an enviable record of earnings stability and a high proportion of assets carried in tobacco in the process of curing. Nevertheless, the company would be better protected with its debt in the form of long-term bonds rather than short-term bank loans if bank credit should become tight or bankers become concerned over a decline in tobacco prices.

**Overcapitalization and intangible assets.** The presence of intangibles in the balance sheet is regarded by some as a suspicious feature and an indication of overcapitalization. Inasmuch as the reader can deduct the item from the assets and reduce the net worth accordingly before making his analysis, there need to be no bias against the item if it is plainly stated. This adverse feeling is apparent in the popular identification of good will and patents with "watered stock." A considerable number of industrials, formed before 1920 and the advent of stock without par value, were particularly generous in their use of good will. The F. W. Woolworth Company issued \$50,000,000 of common stock against \$50,000,000 of good will at the time of its incorporation in 1911. The total tangible assets were acquired by an issue of \$15,000,000 of preferred stock. This good will was gradually eliminated in the years 1922-1925. In popular parlance, "the water was squeezed out," and tangible values arising out of earnings replaced intangibles.

This discussion leads to the question as to when the analyst shall label a corporation as overcapitalized. Some regard a corporation as overcapitalized when any part of its capitalization is in excess of the tangible property. Such a position is unwarranted. The presence of good will may be justified by earning power of the property at the time of acquisition.

The Coca-Cola Company is the exception in present day practice in reporting the full cost of a substantial good will in its balance sheet, as shown on the next page, under the caption of Formulae, Trade-mark and Good Will. The earning power and market price of its stock indicate that this book value is far from excessive. Formerly, when good will was much more common in the industrial corporation balance sheet, critics were inclined to disparage its presence and often charged that such assets were mere "water," and argued that corporations with such an asset were "overcapitalized." ("Watered" stock is stock issued for a par amount in excess of values paid in.) Sometimes a study of earning power would indicate the value assigned good will was excessive, but the criticism should only be made after a demonstration of such a lack of value. Good will may be very valuable, as it was in the case of the Woolworth Company.

A second viewpoint is to regard a business as overcapitalized when it is unable to earn a return on its capitalization. From this view-

**COCA-COLA COMPANY**  
**CONSOLIDATED BALANCE SHEET**

DECEMBER 31, 1951

<i>Assets</i>	<i>Liabilities</i>
<b>CURRENT:</b>	
Cash	\$25,258,607
Government Securities at cost (market value \$31,158,316)	31,112,913
Accounts Receivable — Trade (less allowance of \$62,595)	12,225,933
Inventory—Merchandise (priced at lower of cost or market)	43,591,987
<b>OTHER INVESTMENTS AND OTHER ASSETS:</b>	<u>\$112,189,440</u>
Security investments—at cost (market value \$818,550)	\$ 478,105
Other receivables and miscella- neous	6,706,013
<b>PROPERTY, PLANT AND EQUIPMENT</b>	
—At Cost:	
Land	\$ 4,035,485
Buildings	30,670,195
Machinery and equipment	42,108,326
Containers	13,255,892
Less Allowance for depreciation	<u>\$90,669,898</u>
Formulæ, Trade-Mark and Good Will—at Cost	33,134,446
Deferred Charges	41,440,683
	<u>2,776,541</u>
	<u>\$221,126,222</u>
Accrued taxes—including taxes on income	\$ 35,292,618
Less U. S. tax notes	23,649,866
<b>OTHER NOTES PAYABLE—SUBSIDIARIES RESERVES:</b>	<u>\$ 27,794,279</u>
For unremitted foreign profits	\$ 21,617,682
For employees' retirement plan	4,362,265
<b>MINORITY INTEREST IN SUBSIDIARIES</b>	<u>369,293</u>
Capital Stock (4,280,805 no par shares)	\$ 26,755,031
Capital Surplus	1,825,048
Earned Surplus	137,566,121
Less 4,827 shares at cost	<u>\$166,149,200</u>
	<u>320,987</u>
	<u>165,828,713</u>

Note: Footnote to original balance sheet states amounts of foreign assets included under current, fixed, and other assets, and also in earned surplus.

point, a company which has invested a dollar of cash in tangible assets for every dollar of capitalization could be overcapitalized. Inasmuch as the word *overcapitalization* carries a suggestion of willful wrongdoing, it would be clearer to use some more definite expression that indicated that the earning power was depressed, or that the promoters had issued so much in the way of fixed income obligations as to render the capital structure top-heavy.

**Surplus.** The nature of surplus has been discussed in the chapters on statement construction. The study of surplus requires two steps: (1) the gathering together of the various accounts that represent surplus, such as the surplus reserves, so as to ascertain the total surplus; and (2) the analyzing insofar as possible to ascertain what portion of the surplus is earned and what portion unearned.

The figures of the Northwestern Steel Company shown on the following page illustrate what the well-constructed balance sheet might show as capital structure. Both the older terminology and the newer, which avoids the terms "surplus" and "reserves" are given.

\* By showing the amount of bonds held in the treasury as distinct from those retired through sinking fund, the balance sheet enables the reader to determine to what extent purchases for the latter are already on hand and in the treasury. Reference to the statement of sinking fund requirements would tell how far into the future the working capital is relieved of this potential drain for sinking fund by such forehanded purchases. Other long-term, interest-bearing debt, such as mortgages and term loans, are included in the capital structure as well as the funded, or long-term negotiable, debt.

The statement of the amount of authorized but unissued stock shows the extent to which such stock might be available for various purposes without an amendment of the corporate charter. The figures for treasury stock, although showing the amounts reacquired, do not reveal how much was expended in obtaining it. Any options to purchase additional stock or rights to convert bonds or preferred stock into common are significant because they may so increase the number of shares as to reduce the assets or earnings per share.

When surplus is stated as not available for dividends, cash dividends are meant. Capital surplus may be and sometimes is made the basis of stock dividends. Capital surplus arises most commonly from capital paid in by stockholders in excess of the par or stated

value of the stock and initial surplus at the formation of a new corporation, as through merger. Allied to capital surplus in its unearned nature and unavailability for dividends is any amount arising from an increase in the value of assets as a result of appraisal.\*

**CARITAL STRUCTURE FROM THE BALANCE SHEET  
OF THE NORTHWESTERN STEEL COMPANY**

December 31, 1950

*Funded Debt:*

*Series A—4% Debentures Due July 1, 1965:*

Issued .....	\$20,000,000
<i>Less:</i> Retired through Sinking Fund .....	3,700,000
Acquired and Held in Treasury .....	3,200,000
Total Outstanding .....	<u>\$13,100,000</u>

*Stockholders' Equity (or Net Worth):*

*7% Cumulative Preferred Stock:*

Authorized .....	\$10,000,000
<i>Less:</i> Unissued .....	2,000,000
In Treasury .....	1,400,000
Total Outstanding .....	<u>\$ 6,600,000</u>

*Common Stock without Par Value\*—2,500,000 Shares*

*Authorized—Stated Value of \$5.00 per Share:*

Issued .....	\$ 6,000,000
<i>Less:</i> In Treasury .....	200,000
Total Outstanding—1,160,000 Shares .....	<u>5,800,000</u>

*Capital Contributed in Excess of Stated Value of  
Stock (Paid-in Surplus) .....*

18,000,000

*Retained Earnings:*

*Appropriated for:*

Sinking Fund (Reserve for) .....	\$ 3,700,000
Retirement of Preferred Stock (Reserve for) .....	900,000
Contingencies (Reserve for) .....	3,000,000
Unappropriated (Earned Surplus) .....	<u>7,600,000</u>

*Unrealized Appreciation on Land and Buildings—*

*per appraisal (1930) .....*

2,300,000

*Total Stockholders' Equity (Net Worth) .....*

\$46,800,000

*Total Capital Structure .....*

\$59,900,000

\* Options to purchase 200,000 shares of common stock at \$35 per share are outstanding.

<sup>a</sup> In some states cash dividends upon preferred stock may be paid from capital, or paid-in, surplus.

The surplus reserves represent surplus under another title.\* Sometimes such reserves are termed Appropriated Surplus. A reserve, such as the sinking fund reserve or the reserve for the retirement of preferred stock, is returnable to general surplus after the purpose for which it is created has passed. Because of the drain on working capital caused by the actual retirement of the securities, it will usually be unwise to pay cash dividends on the basis of such surplus, although stock dividends would be appropriate.

An advantage of the stock dividend is the reduction of surplus and, consequently, of the pressure from stockholders for large cash dividends. In general, stock dividends may be declared whenever it is desirable to give the stockholders evidence of the increase in their interest without reducing the working capital by a cash distribution. Two possible disadvantages are (1) the reduction of surplus to a point that might cause it to be easily wiped out by a few bad years (an impairment of capital would result more easily); and (2) the strain on working capital that might follow should the directors feel under any necessity of maintaining the former cash dividend rate on the increased number of shares without regard to the working capital position.

**Capital structure proportions.** The discussion up to this point in the chapter has been concerned with the character of the various items in the fixed capital section of the balance sheet. It now turns to the relationships which are likely to be meaningful and to aid interpretation. The capital structure proportions probably receive the most attention. Because in many balance sheets the bonds or other fixed debt and the net worth constitute the bulk of the liability side of the balance sheet, their relation tells almost the whole story of the balance between debt and the owners' interests, or between borrowed and owned capital. This statement holds true especially for the railroads and the public utilities, where the fixed capital section

\* Surplus may not only be shown as "plus reserves" but may be hidden under excessive valuation accounts or overstated liabilities. An unusual example is found in the reports of the Curtiss-Wright Corporation. It reported during the war years 1941-1945 \$90 million of net income after provision for taxes, renegotiation, and various contingencies. During 1945-1949 it credited surplus with a total of \$51.1 million (net after certain deductions) which included not only a transfer from (or reduction of) a reserve for war and postwar contingencies of \$18.6 million but also \$17.5 million from reserve for taxes and \$16.8 million from reserve for service guarantees.

is almost the total balance sheet.<sup>5</sup> Probably the majority of the great industrial corporations now use current or short-term credit so little that the same thing can be said of their capital structures.

As to what the proper proportions of debt and net worth are, no hard and fast rule can be laid down. The general principle to be kept in mind is that debt should be kept within such limits that the corporation can confidently face the adverse possibilities of a business depression without fear of insolvency. In view of the difficulties of the public utilities in 1920 and the railroads in 1931-1933, it might be argued that funded debt is always potentially hazardous. But so long as our economic society wishes to take advantage of the lower capital cost of funds obtained by borrowing, some courage must be exercised. The actual survival rate of past depressions must be kept in mind.

Inasmuch as no business mortality tables of practical worth are possible, because of the uncertainties of the business cycle, certain empirical rule-of-thumb maxima have been suggested. For public utilities, this maximum percentage for funded debt in the capital structure may be set at 60 per cent; and for railroads, because of the lower earning power of their property investment, at 50 per cent. Because bonds should be salable at a rate lower than the rate earned on the total investment, this limit should result in the corporation's earning its interest at the conventional minimum of two times over under ordinary conditions. Thus, if an electric light and power company has earned 6 per cent on each \$100 of investment, it could afford to pay an interest rate as high as 5 per cent on each \$60 of borrowed funds and still show interest expense of only \$3.00, or one half of earnings. With the very low interest rates of the 1940's, a higher than two times coverage came to be expected as minimum for investment quality utility bonds.

Although individual manufacturing and merchandising concerns have shown as much or even more stability than the public service corporations, the general opinion has been that bonds should occupy a smaller place in their capital structure. A maximum limit of one third would probably obtain for industrials, subject to a possible further limitation in the light of the earnings record, the character of the business, and the extent to which short-term credit is used.

Preferred stock may be issued with the idea of creating a security

<sup>5</sup> See below, Chapters XII-XIV.

of investment quality equal to a bond, insofar as that is possible for a contingent charge obligation. To obtain such a rating the preferred stock would have to meet the standards set for bonds. Because many issues do not attempt an investment standard and often represent merely a "convenient way of sharing in a highly speculative situation, no standards of maximum proportion are possible for them.

Because the capital structure proportions are studied primarily for the light they throw on debt burden an equivalent approach would be to study the ratio of Debt to Net Worth. The latter relation might be said to have the advantage of emphasizing the fundamental relation and would be more satisfactory to the extent that it brought debt other than the funded debt into the proportion. However tradition is strong and probably no investment study would be regarded as complete without a statement of capital structure proportions in percentage form.

**Liability under long-term leases.** The increasing practice of selling business real estate to some investment institution and then renting it back for a long period under a long-term lease generally with a repurchase option has raised the question as to whether such an obligation should not be included as a part of the long-term debt in capital structure analysis.<sup>4</sup> In principle rental payments extending beyond one year are the financial equivalent of a long-term debt. The equivalent liability could be determined by an analysis of the sale and leaseback contract and the computation of the present value of the series of rental payments. The situation is often complicated by legal elements in the lease and insufficient information for making a computation. Any rule-of-thumb multiplier to be applied to the amount of rents to estimate the equivalent liability in terms of principal is unsatisfactory. The ratio of principal (or present value) to annual rents decreases as the remainder of the lease term shrinks.

<sup>4</sup> In the American Institute of Accountant Financial Bulletin No. 38 (1949) Disclosure of Long-term Lease in the Financial Statements of Lessees, it is stated that where the lease is clearly in substance a purchase the leased property should be included among the assets of the lessee with suitable accounting for the corresponding liabilities and for the related charges in the income statement. The financial aspects of the sale and leaseback are discussed by Wm I. Cary, Sale and Leaseback of Corporate Property, *Harvard Business Review*, March 1949 p. 151; the accounting aspects by John H. Myers, Presentation of Long-term Lease Liabilities in the Balance Sheet, *Accounting Review*, July 1948 pp. 289-295. The inclusion of capitalized rentals in railroad capital structure analysis is discussed in Chapter XIII, p. 366 below.

with the passage of time and also with any increase in the rate of interest assumed to capitalize the rents.<sup>7</sup>

The most common practice is to omit the imputed liability in calculating the capital structure proportions of mercantile and manufacturing concerns but in commenting on the proportions to note the presence of the lease obligation. Attention will be centered on the impact of the rents in the income statement, where the number of times that earnings cover fixed charges, including rents, will be studied and the length of time that the obligation has to run will also be noted.<sup>8</sup>

**Tangible assets: total debt.** Instead of using the Debt to Worth ratio it would be still more logical to construct the testing ratio along the lines of the current ratio, that is by comparing the total tangible assets with the total debt burden, including both current and fixed liabilities. The debt to net worth ratio states the relation of the debt to the supporting equity of the owners that must be wiped out before creditors suffer a loss. But the net worth is significant protection to creditors only in terms of the assets behind it. The use of the assets in the ratio instead of net worth is more likely to focus attention upon the assets, and so the reader is more likely to appreciate the need for eliminating intangibles in making comparisons, and for considering the quality of the other assets.

Desired capital structure proportions can be readily converted into equivalent figures for the ratio of tangible assets to total debt if it is assumed that the bonds and net worth are the only really significant items on the liability side of the balance sheet. Thus, if the bonds are to be limited to a maximum of two thirds of the capital structure, the equivalent limit for the ratio of tangible assets to debt would be a minimum of one and one half to one ( $100 \div 66\frac{2}{3}$ ). This figure is apparent from a simple balance sheet in which this maximum funded debt proportion is shown under column A.

<sup>7</sup> See p. 451 below

<sup>8</sup> The contrast in problems may be seen by comparing the intermediate term store leases, common to chain stores, of Western Auto Supply Company and the long-term sale and leaseback of Western Union Telegraph Company. The former reported (1951) minimum annual rentals of \$2,111,300, of which \$1,009,200 was on leases expiring through 1951-1954, \$959,400 through 1955-1959, and \$142,700 through 1960-1980. The latter reported (1951) the sale in recent years of its office and other buildings with a leaseback for 25 years or more. Present annual rentals on these total \$1,204,000, but current rents from subtenants are about \$490,000, which latter might, however, be for short terms.

		A	B
Tangible Assets .....	100	Bonds .....	66½ 33½
		Net Worth .....	33½

If the bonds were to be limited to one third, then the ratio of assets to debt should not fall below three to one ( $100 \div 33\frac{1}{3}$ ). The introduction of other forms of debt, generally current debt, upsets this simple direct relation between capital structure proportion and the ratio of tangible assets to debt. The possible presence of current debt is in this way at least partly responsible for the apparently stricter standard for the capital structure proportion for industrial corporations. If it is assumed that (a) one half of the tangible assets of a hypothetical industrial are in current assets, a not unusual average, (b) the current debt is up to the high level of one half of the current assets, and (c) the bonds are one third of the capital structure (bonds plus the net worth), the following balance sheet results:

Current Assets	50	Current Debt	25
Fixed Assets	50	Bonds	25
		Net Worth	50
•	<u>100</u>		<u>100</u>

The result is that the ratio of total tangible assets is but twice the total debt. The illustration suggests that the minimum figure for this last ratio should be two in the case of mercantile and manufacturing concerns.

**Funded debt protection.** Two other ratios are often used to measure the asset protection of the bondholders: (a) the ratio of working capital to funded debt, and (b) the ratio of the assets that secure a given issue to the secured bond issue being studied. Public service, mining, and real estate corporations have relatively small current assets, and so the use of the former ratio is confined to manufacturing and mercantile enterprises. For these latter businesses it is customary to state that working capital should equal or exceed the bonded debt if the bonds are to enjoy investment quality. Because bonds are often secured by a lien upon the fixed assets and their interest supported by earnings, the logic of the ratio might seem doubtful. Actually, the bondholders are recognizing two important factors; namely, (1) the greater ease of valuing the current assets as compared with the fixed assets, and (2) the virtue of a strong working capital in supporting interest charges during a period when earnings are temporarily inadequate.

The ratio of the mortgaged assets to the secured bonds may be a difficult matter to figure if a multiplicity of liens exists, as is often true in railroad finance. In such situations, the ratio might be omitted. Generally, however, in the public utility (under the modern, open-end, unified financing) and in the industrial field, the ratio is that of the fixed operating assets (with sometimes the non-operating investments added) to the total mortgage debt. The minimum usually expected is one and one half for utilities and two for industrials. Fixed assets represent immobile capital difficult to evaluate, and so this ratio is of secondary importance as compared with those ratios that measure earnings protection.

**Testing plant value.** As in the case of the current ratio, the meaning of any solvency test that relates assets to debt depends upon the accuracy with which the asset is valued. Just as the receivables and inventories were checked by comparison with sales volume, so the plant and equipment may be compared with sales to get "plant turnover." "Plant" is meant to include the "total fixed tangible assets used in operation" and to exclude outside fixed investments and intangibles. The resulting ratio gives the dollars of sales in the given year per dollar of plant investment. The two advantages of high plant turnover are:

1. The larger the volume of business with respect to investment, the less is the per cent of net profit on sales required to earn a given rate of return on investment.

2. The company with a low ratio is presumably obliged to spread the fixed expenses resulting from the use of the fixed assets such as depreciation and interest, and generally insurance and taxes, over a relatively smaller volume of business, and consequently is likely to be at a disadvantage from a competitive standpoint.

The ratio is consequently said to reflect the efficiency with which the fixed investment has been administered. Three leading considerations make it doubtful whether plant turnover can be used, other than tentatively, for such a purpose.<sup>1</sup>

1. *Price level changes.* Sales tend to vary with changes in the level of prices, but plant usually remains on the books at cost until its parts are worn out or discarded and new units entered at the

<sup>1</sup> See sources cited in footnote 10, page 104, for data showing the extreme variability of the relation between sales and fixed assets.

going level of prices. Furthermore, construction costs change over a period of time, and two plants of the same size and efficiency but built in different years and at different price levels will show different values without necessarily reflecting the relative efficiency of the two managements. In this important respect the fixed assets are different from the current assets. Receivables and inventories are being frequently converted into cash and replaced in the accounts at the going level of prices (note the exception for inventories under LIFO). Individual buildings and units of equipment are replaced only at relatively long intervals.

**2. Operating functions assumed.** Sometimes two concerns are engaged in apparently the same business, but upon closer scrutiny it is found that one performs more functions than the other--a fact that justifies additional investment. Thus, some large retail merchandising concerns have engaged in the wholesaling function, which involves warehouses and delivery equipment, and in manufacturing, which calls for a factory and its equipment. Sears, Roebuck and Company, for example, unlike most merchandising concerns has engaged in some manufacturing activities. California Packing Corporation, a cannner, has land and ranches for raising some of its fruit and vegetable pack. Where separately stated such extra property investment could be omitted in comparing plant turnover with other canners.

If the additional functions are wisely assumed and efficiently conducted, the larger fixed investment that lowers "turnover" will be balanced by a larger net profit margin providing a return upon the extra funds.<sup>10</sup> Even among small merchants, differences will arise because some invest only in fixtures whereas others also invest in the real estate for their place of business. Sometimes a merchant buys a building in excess of his needs and rents a portion, with the result that the fixed asset includes what amounts to a nonoperating investment. Plant turnover in such a situation will appear low. The clue to such a situation would appear in "total income in the earnings statement, if the figures in this statement are complete and sufficiently detailed.

**3. Depreciation reserves.** If the net fixed assets after the deduction of depreciation are used in this ratio, two concerns with equal plant costs but of different ages might show, as a result, different plant turnovers. For this reason, it has been argued strongly that

<sup>10</sup> For further discussion, see material on operating ratio, page 206.

plant turnover should always be figured on the basis of gross rather than net plant value. This course is logical. Nevertheless, some argue for the use of net plant on the grounds that whatever part of the asset has been depreciated relieves the business of the burden of so much property investment. Occasionally, only the net plant figure is reported in the balance sheet.

So general is the bias in favor of conservatism, that a warning as to dangers of understating asset values may not be amiss.<sup>11</sup> The ultraconservative company may lay itself open to public hostility by appearing to earn an excessive return because of an understated investment; it may make itself liable to tax levies on excess profits, and stockholders may be misled as to the value of their holdings. On the other hand, the fact that plant and machinery that is largely written off are still in use does not mean that they are worth more than book value. Obsolescence or changes in the location of the industry may have reduced economic value to the book figure even though the assets are physically sound.

**Adequacy of the depreciation reserve.** The adequacy of the depreciation reserve is studied more accurately by examining the annual allowances in the earnings statement than by studying the balance sheet. The size of the reserve and the rapidity of its growth are often suggestive, however, especially in the light of the performance of similar concerns. The factors that are most likely to cause differences in the size and growth of the depreciation reserve are:

1. *Age of property.* A new plant at the moment of its completion would show no reserve. As the plant ages, the reserve accumulates, but in time some parts are replaced and the old parts are charged against reserve to the extent that an adequate amount has been accumulated. In this way, additions to the reserve would tend to be balanced by decreases caused by discarded units. The reserve would tend to stabilize as a result of this process if the property

<sup>11</sup> An example of ultraconservatism is found in the complete write-off of fixed assets by Commercial Solvents Company. In 1930 this concern wrote down to \$1 the remaining book value of its plants at Terre Haute, Indiana, and Peoria, Illinois, formerly carried at about \$1,800,000 and the replacement value of which was unofficially estimated at \$10,000,000, or enough to double the book value of its stock in that year. See figures above on page 134 showing how the bulk of the assets acquired subsequently are carried on a conventional basis.

were huge enough and diversified enough so that individual replacements did not cause too great fluctuations. Actually, such a balanced condition appears in practice but rarely.

2. *Kinds of assets.* Some parts of the fixed assets, such as land, are not subject to depreciation; other parts, like buildings, will depreciate slowly; and machinery will depreciate rapidly. Comparability of depreciation policies will depend on the extent to which the concerns compared show similar proportions of the different kinds of fixed assets.

3. *Managerial policy.* The management may influence the depreciation reserve by adopting higher or lower rates—a matter of judgment and of conservatism. The life of an automobile, a machine, or a building is not wholly a matter of objective measurement, but is a subjective estimate related to problems of repair cost and is connected with other operating expenses. The subject is more properly considered in relation with earnings, but its importance is apparent at this point also.

**Miscellaneous ratios.** Inasmuch as various writers have urged the more extensive use of ratios, it seems appropriate to mention a few here, with a brief statement of the theory behind their use and the reason why they should be discarded.<sup>12</sup> No mention will be made of ratios that are merely reciprocals of those given or are essentially the same ratio in different form as (1) total liabilities to total tangible assets, (2) net worth to total debt, and (3) net worth to total tangible assets.

1. *Fixed Tangible Assets to Net Worth* is intended to show (a) possible overexpansion of the fixed assets, and (b) the possibility that too much owned capital is tied up in fixed assets. This ratio cannot be used to detect fixed asset overexpansion because a high ratio may not mean relatively large fixed assets at all but only a small net worth relative to debts. Excessive fixed asset investment will be detected by a study of plant turnover, by earning power, and a comparison of the proportions of current and fixed assets. Whether or not a large or small part of net worth is tied up in fixed assets

<sup>12</sup> Negative material in the form of illustrations of what not to do may seem superfluous to some readers. But so strong is the power of suggestion when coming from the printed page that some warning seems necessary against the wasteful duplication of effort and misleading results which would come from adopting all of the multitude of ratios suggested by various writers.

is chiefly significant as it bears on solvency. Solvency is more directly and surely revealed by studying the various liquidity ratios measuring current position, and the ratio of total assets to total debt.

2. *Fixed Liabilities to Total Assets* is intended to show the security of the former. But the security of the fixed creditors' claims cannot be measured apart from that of other creditors with equal claims. Consequently the suitable test is a comparison of total liabilities to total assets (or an equivalent ratio) except where a priority of lien exists, as in the claim of secured debts against pledged assets, or there is a priority in time of payment, as in the case of current debts, whose relation to current assets is studied in the current ratio.

3. *Current Debt to Fixed Debt*, which shows the proportion of the debt that is near term, is intended to measure the proportion of hazard to solvency in the debt—the greater the proportion of current debt, the more hazardous it becomes. The only significant measure of debt hazard is found in the relation of the debt to the means of payment. The relation of one form of debt to another form can throw no significant light upon this point.

4. *Net Worth Turnover* is measured by the ratio of sales to tangible net worth, and is said to reveal the profitable employment of capital and "overtrading."

The objections to this interpretation are analogous to those given in discussing "working capital turnover" in Chapter V. It is one of those mixed ratios reflecting such opposite things that its movement in either direction might be favorable. To the extent that net worth is relatively large (and so gives a relatively low turnover), it may be the result either of large and slow-turning assets (receivables, inventory, and plant) or of large bank balances or outside investments. Slow turnover growing out of slow-turning operating assets would be unfavorable; but if it was the effect of large cash balances, it would be favorable, or if the result of outside investments, it would mean nothing, because such assets bear no relation to sales. The confusion of meaning does not end here, for the net worth turnover may be equally influenced by the relative debt burden, and, ironically enough, the concern that had the most top-heavy debt would by so reducing the net worth show the most favorable net worth turnover. Then the ratio is said to reveal "overtrading"; that is, doing an excessive volume of business on an inadequate net worth. Whether net worth is inadequate is best measured by the solvency tests previously

discussed; whether net worth is effectively and profitably employed is best measured by the turnover of the various operating assets and by the earnings.

5. *Surplus to Capital Stock* is intended to show the conservatism of the management; the larger the ratio, the more conservative the management. Objections to such a test lie in the fact that on the one hand surplus can arise from so many directions besides retained earnings, and on the other hand it can be retained by the device of stock dividends without appearing in the Surplus and so in the numerator of this ratio. The age of the company is also likely to be a large factor in the ratio.

**Conclusion.** This chapter has presented the description of the items which ordinarily appear in the fixed capital section of the balance sheet, and the relations that are ordinarily scrutinized in its analysis. On the asset side of this section, the chief items may ordinarily be classified as tangible fixed operating assets, nonoperating fixed assets, or intangibles. On the liability side appear the fixed debt, the preferred stock, and the interest of the common stockholders. The relationships or ratios used will vary with the type of analysis and the nature of the company. Those most generally useful are:

1. Capital structure proportions (a percentage analysis of the fixed debt and net worth combined)
2. Tangible Assets: Total Debt
3. Working Capital: Fixed Debt.
4. Mortgaged Assets Secured Fixed Debt
5. Plant (fixed tangible operating assets) Turnover.
6. Accumulated (or Reserve for) Depreciation: Depreciable Assets.

The investments will, when the information is available, be studied as such—their income, earning power and market value being of interest in proportion to their relative importance among the assets.

Two general precautions are worth mentioning. Standards will vary with the situation. A trade creditor will ordinarily assume more risks than a bank lender; a speculator more than an investor. Furthermore, the significance of debt is affected by earning power. Other factors being alike, a business with high earning power is able to assume debt with more safety than one with low earnings.

## CHAPTER VIII

### Interpreting Balance Sheet Changes

**Statement of balance sheet changes.** A number of years ago, Professor William Morse Cole gave the uneuphonious but highly descriptive title of "Where Got and Where Gone" Statement to a form showing changes in the balance sheet of a business over a series of years. Such a statement throws the changes into sharper relief and saves the reader the effort of much computation. The advantages have been stated as follows:<sup>1</sup>

It is obvious that an important result of constructing such a table . . . is the possibility of seeing from it at a glance the changes in solvency. Certain kinds of assets are always good, certain kinds are sometimes bad, and a few kinds are usually bad. Certain kinds of liabilities are not suspicious, and certain other kinds are often so. A summary table showing the changes indicates whether good assets are exchanged for less good, and whether troublesome liabilities are exchanged for those that are less exacting.

The practice of presenting a comparative balance sheet in the annual report is growing.<sup>2</sup> The most common practice is to give the balance sheets for the two most recent years. A few corporations offer a more extended comparison for a period of ten or more years, generally in a simplified and condensed form. Such usage reflects increasing recognition of the importance of balance sheet trends. The calculation and reporting of the amount of year to year changes is relatively infrequent and ordinarily has to be done by the interested reader.

For illustrative purposes, the combined condensed balance sheet

<sup>1</sup> W. M. Cole, *Accounts, Their Construction and Interpretation* (Boston: Houghton Mifflin Company, 1915), p. 97 *et seq.*

<sup>2</sup> A discussion of both comparative balance sheets and income statements of particular interest is that of Finney and Miller, because it suggests that much of the analytical calculation mentioned here should be the work of the accountant. H. A. Finney and H. E. Miller, *Principles of Accounting—Intermediate* (New York: Prentice-Hall, Inc., 4th ed., 1951), Chapter 7.

## INTERPRETING BALANCE SHEET CHANGES

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figures for all manufacturing corporations in the United States are shown below for the three years 1940, 1945, and 1951.

### COMBINED BALANCE SHEETS OF ALL MANUFACTURING CORPORATIONS IN THE UNITED STATES

(Billions of dollars—as of Dec. 31)

Assets	1940	1945	1951	Changes 1940-1945	Source	Use
					1945-1951	
Cash	57	113	184	+ 56		21
Government securities	11	110	126	+ 99		16
Receivables (net)	84	136	187	+ 52		51
Inventories	123	173	392	+ 50		219
Other current assets	*	*	18			18
Total current assets	276	531	857	+255		326
Plant & equipment	427	539		+112		
Less depreciation	191	287		+ 96		
Net property	236	251	498	+ 15		247
Investments	82	101		+ 19		
Other assets	11	27	92	+ 16		36
• Total assets	605	910	1448	+305		
<i>Liabilities &amp; Net Worth</i>						
Accounts payable	53	83	115	+ 30		32
Taxes payable	20	27	54	+ 7		27
Federal income taxes			156			
Other current liabilities	37	94	56	+ 57		118
Total current liabilities	110	205	341	+ 95		176
Long-term debt	54	64	136	+ 10		
Revolvers	*	*	23			95
Capital stock & surplus	442	642	908	+200		266
Total liabilities & net worth	605	910	1448	+305		
Total sources & uses					573	573
Working capital	166	326	476	+160		119

\* Not reported.

Totals do not always add precisely because fractions dropped.

Sources: Treasury Department Statistics, Income and Federal Trade Commission and Securities Exchange Commission Quarterly Industrial Financial Report Series.

The first interval 1940-1945 shows the impact of World War II upon industrial balance sheets, the second, 1945-1951, the effects of post-war expansion and inflation. In order to throw the changes into relief for these two periods, they are shown in columns added to the balance sheet figures. To illustrate two different practices, the changes

for the first period follow the more common usage—being shown in a single column with appropriate plus or minus signs; changes for the second period are placed in two columns, so as to show “where got and where gone,” or the source and use of funds. The reader will note that if these changes were separated from the balance sheets, it would be difficult to judge their relative importance. Data for long intervals, such as are given here, have the advantage of reflecting the cumulative changes and bringing out major tendencies, a year by year presentation would reveal the consistency of the movements or trends and their conformity to business cycle influences.

When an asset is disposed of, it either brings some other value into the balance sheet or results in the cancellation of some item on the liability side. (Actually, a decrease in an asset may represent a loss in whole or in part rather than a source of funds. In that case the “liability” decreased is Earned Surplus and the latter change appears as a “use,” application or disposition of funds.) Similarly, assets or funds may be acquired by adding to a liability. For this reason, decreases in the asset side and increases in the liability side, indicating the source of funds or values used by the concern, are entered in the “Where Got,” or source column. The resulting increases in asset accounts or reduction of liability indicating where the values acquired by the business are bestowed are entered in the “Where Gone” or use column.

- Because both periods were marked by rising prices and expanding industrial activity, each of the individual balance sheet items was generally increased. Because increases were the rule, attention centers on the relative amount of the various increases.

**Changes in condition during the war period.** During the war period, we find the additional funds went into current rather than fixed assets. Current assets almost doubled (\$27.6 to \$53.1 billion), the net plant changed but little (\$23.6 to \$25.1 billion). Gross plant grew, however, by about a fourth (\$42.7 to \$53.9 billion) but was counterbalanced by an almost equal increase in the allowances (or reserve) for depreciation. During the war years civilian construction was held at a minimum and considerable war plant was constructed and owned by government agencies, which then leased it to the manufacturers of military goods. Such emergency facilities as were built by the manufacturers were depreciated or amortized during the war period.

As for current assets, goods were in short supply and moved rapidly into consumer hands or were shipped as produced to the Government. Inventories were consequently kept at a low point, and receivables were paid promptly. Liquidity was high at the end of 1945. Of the \$25 billion increase in current assets, \$15 billion flowed into cash and Governments, as compared with \$10 billion into receivables and inventories. Such liquidity was abnormal and temporary. Upon the conversion to a civilian economy, cash and equivalent were spent to carry inventories and receivables and to replace depreciated assets.

On the liability side, we see the two general sources of funds were current credit and stockholder investment, which supplied substantially \$10 and \$20 billion, respectively. A major part of the current debt increase was Federal income tax liability, which in this type of statement is classified as a "source" of funds. The Government puts in nothing. Rather the amount represents Uncle Sam's share in the earnings of the business, which are the real source of the funds even though convenience dictates the treatment of this liability like that given others which are incurred to obtain funds utilized in the business. Where Retained Earnings (or Earned Surplus) may never be paid out to the owners, the tax collector requires full and prompt payment within a few months after the accounts for the year have been cast up and the tax liability calculated. Most of the increase in the stockholders' investment represents earnings retained for the use of the business rather than stocks sold to raise money.

**Postwar changes in financial condition.** During the postwar period, 1945-1951, the balance sheet figures continued to grow partly because of growth in population and productivity and partly because of price inflation. Although the dollar increase in total assets for this six-year period is much larger than for the preceding five-year period, they both represent an increase of about one half over their respective initial year totals. With the end of the war, new plant could be built. Net plant investment rose (\$21 billion) by an amount almost equal to the combined increase in receivables and inventories (\$23 billion). Although cash and Governments continued to rise moderately, their relative importance fell to a more normal relation with other assets, comparable to that in 1940. The liquidity of major industrial corporations, which dominate these aggregate figures, is in marked contrast to the financial condition of most small business units. Because of the dangerous repercussions of bankruptcy for such

industrial giants upon business and the economy, their liquidity is a useful social asset.

On the liability side, the major source of funds is again the increased investment of stockholders, chiefly retained earnings. The chief difference between the war and the postwar periods is seen in the greater reliance upon long-term debt financing. The rise in debt during 1945-1951 caused many adverse comments. Reference to the figures here shows, however, that for the manufacturing industries as a whole, the situation in 1951 compared favorably with 1940. In 1940 the \$54 billion of long-term debt was 33 per cent of the working capital; in 1951 it was only 29 per cent. As for current position, the current ratio in 1940 was 2.5 or somewhat higher than the 2.25 in 1951; cash and Governments amounted to 63 per cent of current debt in 1940 as against 68 per cent in 1951.

Other points will be noted by the thoughtful reader such as that 1951 plant carried at cost after a long period of substantially rising prices would represent a considerable understatement of current worth. Such a fact would influence one's interpretation of net worth and of the ratio of fixed property to long-term debt. The figures must be read in the light of background conditions and of accounting conventions. In this period, the effects of a major war, inflation, and a business boom are clearly reflected and would be expected to contrast sharply with a period such as the decade of the 1930's.

**Source and application of funds statement.** This examination of the statement of balance sheet changes leads us to a consideration of a special statement called a "source and application of funds" statement that is sometimes prepared by the accountant. This latter form is a modification of the former, and is intended to portray more exactly the inflow and outgo of actual funds. The adjustments made to obtain this form of report may be grouped as follows:

1. The elimination of accounting entries that represent no flow of funds. An example would be the revaluation of some asset such as land and buildings or good will. If land and buildings had been increased as the result of an appraisal, or good will written off, the list of balance sheet changes would be adjusted to eliminate the effect of these entries upon both the asset and the surplus account. Similarly, stock dividends represent not a real flow of funds but a transfer from the surplus account to the capital stock account and a change

in the number of shares into which net worth is divided; their effect would be eliminated.

Allowances for depreciation, depletion, and obsolescence fall in this group and represent the most common and important adjustment. Depreciation expense in the income statement represents a loss of book value of a fixed asset and not cash outflow as for other operating expenses. Consequently, the business has available for its use not only the net income retained in the business, as it is reflected in any increase in the earned surplus, but also the amount of funds earned through sales to cover such noncash expenses as depreciation. Such funds need not be used at once for replacements. They may be employed for plant additions, debt reduction, or to add to working capital. Perhaps the statement of source and application of funds would be less confusing to the nonaccountant if in listing this item as a source of funds, it were stated as "Funds earned to cover depreciation." The reader may experiment by making this substitution of terms in the following illustrative statement of the United States Rubber Company:

The importance of this characteristic item is apparent when we remember that the annual depreciation allowance for manufacturing companies is likely to run in the neighborhood of 5 per cent of gross plant and equipment and may approach 10 per cent of the net property investment. This percentage will run much lower for utilities and railroads, but their proportion of depreciable assets to total assets will be much higher.

2. The connection of related items to present a more coherent result. Thus a piece of real estate against which a depreciation reserve had been set up might be sold at either a profit or a loss. The three resulting changes in the balance sheet might be brought together to show the net result as follows:

Cost of Real Estate Sold	\$1,000,000
Less Allowance for Depreciation	300,000
Net Book Value	\$ 700,000
Plus Profit on Sale	150,000
Funds Derived from Sale of Real Estate	\$850,000

The \$1,000,000 reduction in the Real Estate account, the \$300,000 decrease in the depreciation reserve, and the surplus change from profit are brought together. The related income on such a profit

could also be brought into this group of related items. Similarly, a premium or discount on stocks or bonds sold may be combined with the face or par amount of securities sold to bring out the actual amount of funds realized from issue.

3 The addition of distributed profits to the figures shown. Earnings distributed as cash dividends are added to the list under the "Application of Funds" heading and an equal sum added to the surplus increase figure under the "Source of Funds" heading. An example of this statement is found in the annual report of the United States Rubber Company and is slightly rearranged here from the original. It draws attention to two noncash expenses and the dividend distribution.

SUMMARY OF SOURCE AND USE OF FUNDS  
for the Year ended December 31, 1951

(000's omitted)

Fund Available		Disposition of Fund	
Net income	30,366	Dividends	15,775
Changes against income not requiring cash		Additions to asset	
Depreciation	13,999	Plant less disposals	21,475
Increase in reserves*	3,271	Inventories	70,611
Increase in current liabilities	65,233	Miscellaneous investments	399
Decrease in accounts receivable	6,552	Prepaid assets	916
Initial cash and Governments	60,553	Decrease in long-term debt	20
		Cash and Government at end of year	70,884

for self-insurance forces, a fugitive and retirement allowances

The information necessary to make all of these changes is not available to the outsider, but the list is suggestive of points that may be kept in mind in reading an ordinary summary of balance sheet changes. The primary purpose of such a summary is to bring out major changes that would not be so apparent to one reading the comparative balance sheet alone. The larger changes reveal the process of scrutiny still remains, and any comment should show that the analyst recognizes such changes as being largely nominal, such as a change in good will valuation, or changes in different parts of the balance sheet that are closely related.<sup>3</sup>

**Summary of changes in net current assets.** Because the Source and Application of Funds statement is often difficult for the non-

<sup>3</sup> For a fuller description of the statement of application of funds see H. A. Finney and H. E. Miller, *Principle of Accounting Intermediate*, Chapter 28.

accountant to understand a Summary of Changes in Net Current Assets (Working Capital) statement has been proposed.<sup>4</sup> This form includes only those balance sheet changes outside the working capital section that impinge on the working capital (or net current assets). Thus, "Current Costs and Expenses Which Reduced Net Current Assets" shown in the preceding illustration would exclude depreciation expense and discount on bonds written off. As in the previously discussed statement, closely related balance sheet changes are assembled for the benefit of the reader. The item "Receipts from Issuance of Bonds" would represent the increase in bond liability minus bond discount set up among the assets; the "Net Proceeds from the Sale of Fixed Assets" would include the reduction of the asset account less the decrease in the reserve for depreciation plus (or minus) the profit (or loss) on the sale.

**SUMMARY OF CHANGES IN NET CURRENT ASSETS FOR THE YEAR ENDED  
DECEMBER 31, 19**  
(thousands of dollars)

Net Current Assets January 1, 19	420
<b>Additions</b>	
Net Sales and Other Income	983
Receipts from Issuance of Bonds	297
Net proceeds from Sale of Fixed Assets	46
	<u>1 326</u>
<b>Deductions</b>	
Current Costs and Expenses Which Reduced Net Current Assets	821
Additions to Buildings	400
New Machinery Purchased	75
Dividends Declared	10
Cost of Treasury Stock—50 shares	4
	<u>1 340</u>
Net Decrease	14
Net Current Assets December 31, 19	<u>406</u>

Some believe the title itself "Change in Net Current Assets (or Working Capital)" is preferable to one which employs the term "funds," such as "Source and Application of Funds." Probably most persons think of funds as cash rather than values of various kinds. It is true that during the cycle of business operations, the current

<sup>4</sup> Harry L. Kunze, "A New Form of Funds Statement," *Accounting Review*, June, 1940, p. 222. The article points out some criticisms of the currently used and incorrectly named Statement of Application of Funds.

assets are constantly circulating through the cash accounts, but many transactions have a delayed effect upon cash. The purchase of merchandise shown as a part of cost of goods sold may represent an increase in accounts payable rather than an immediate cash outlay. Similarly, expenses may be reflected in a current liability, such as accrued expenses, rather than immediately in cash. But increases in current debt have the same effect on the net current assets or working capital as decreases in cash. Consequently, save for such exceptions as depreciation, the current income and expenses are best thought of as changing working capital rather than cash. This reasoning leads to thinking of the balance sheet changes, including the net income (as it affects surplus), as working capital changes rather than a movement of "funds."

This statement, supplemented by a schedule of the individual changes in the current assets and current liabilities, would probably be most useful for the management and the bank credit analyst. For investment analysis, the plain statement of balance sheet changes will generally have the greater value. (Another example of the latter will be found later in this chapter.)

**Percentage balance sheets.** Another device for the study of balance sheets and their changes is the percentage balance sheet. Such statements have been termed "common-size balance sheets" because every statement is reduced to total one hundred.<sup>5</sup> Percentage figures are seldom presented in independent form, as in the first illustration below. They are more often added to comparative balance sheets by the accountant when he is preparing a report for the executive, in the manner illustrated by the second case below.

The important changes are again emphasized, although in a manner different from that in the statement of balance sheet changes. Instead of the absolute changes in dollars shown in the original comparative balance sheet, the changes here are changes in proportion. As a result, an increasing asset or liability will show a decreasing per cent if it fails to grow as rapidly as the total does. Comparisons with companies in the same line of business but of different size in order to discover peculiarities are made easy by this technique.

<sup>5</sup> Alexander Wall and R. W. Duning, *Ratio Analysis of Financial Statements* (New York: Harper and Brothers, 1928), Chapter VI, "Common-Size Statements."

The percentage balance sheet is really a miniature of the original, the percentages being in the exact proportions of the original figures and much easier to read. The virtue of this form in throwing into relief significant tendencies in proportion, such as especially characterize the usual year-to-year comparative balance sheet, is shown in the following statement of Celotex Corporation, which manufactures building material and is the largest producer of rigid insulation board and acoustical products. Its allied lines, such as plaster, sheathing, and roofing, are of secondary importance.

A single table follows the comparative balance sheet, showing three types of material used to aid in the study of comparative balance sheets: (a) percentage balance sheets, (b) a summary of the dollar changes in the balance sheets, and (c) trend percentages (discussed later in this chapter), using the initial year figures (1936) as equal to 100.

The percentage balance sheets, on the asset side, show a fairly constant proportion of current assets for the three selected years, varying between 40 and 45 per cent of total assets. This proportion is somewhat below what is customary for manufacturing companies generally. Most of the remaining assets were fixed operating assets in 1936 and 1951, but in 1940 investments rose to the unusually high figure of 23 per cent. This investment was chiefly, about two thirds, a venture into the roofing field through the acquisition of a substantial stock interest in another company (The other third represented Celotex, Ltd., the Company's English subsidiary). Later this interest was sold and the company acquired its own plants. The unusually rapid plant expansion in the postwar years (from \$10 million to almost \$37 million between 1940 and 1951) meant much new property and so the decline of the accumulated depreciation allowances relative to gross property (from 58 to 39 per cent). Funds earned for depreciation supplied \$8 million of the \$26 million dollar increase in gross property. During the earlier period from 1936 to 1940, accumulated depreciation had risen somewhat relative to gross property (from 51 to 58 per cent) so that depreciation funds supplied \$1.8 million of the \$21 million, or the great bulk, of the increase in gross property.

The greatest changes in balance sheet proportions are found on the liability side. They reflect a solid improvement in financial

## THE CELOTEX CORPORATION \*

## COMPARATIVE BALANCE SHEET

As of October 31

	<i>Assets</i>		
	1951	1940	1938
Cash	\$ 5 904 218	\$ 1,059 958	\$ 892 469
U S Government Securities	996 000	—	—
Notes and accounts receivable (net)	6 402 018	2 245,147	1 367 374
Inventories (lower of cost or market)	5 482 416	1 580 516	1,183 577
Total Current Assets	\$18 784 652	\$ 4,885 621	\$3 413 419
Land including government deposits	1 778 697	—	—
Plant and equipment	34 761 022	—	—
Gross Property	\$36 539 719	10 398 168	8 331 077
Less depreciation and depletion	+ 7,117 85	6 031 917	4,936 549
Net Property	\$22 792 235	\$ 4 366 451	\$4 091 528
Investments	1 507 932	2 750 069	6 460
Deferred charges	1 250 651	139 057	56 755
Patents	1	1	1
Total Assets	\$13 935 473	\$12 141 629	\$7 601 163
	<i>Liabilities</i>		
	1951	1940	1938
Notes payable	—	19,0	1936
Accounts payable	\$ 2 657 580	689 937	\$ 387 369
Accrued expense, interest, taxes	1 990 067	640 433	156 274
Provision for Federal income tax	4 451 343	121 571	29 419
Less U S liquid tax notes	3 900 000	—	—
	\$ 551 343	—	—
Sinking fund due within one year	437 500	—	—
Total Current Liabilities	\$ 5 666 790	\$ 1 715 131	\$ 573 063
Funded debt	5 140 500	3 539 000	2 528 500
Notes payable	—	50 000	—
Other fixed liabilities		\$1 686	—
Prefeered stock	5 137 250	2 907 250	2,907 250
Common stock	905 536	638 410	268 685
Paid-in surplus	6 309 152	706 843	433 013
Earned surplus	20 482 520	2 581 659	590,652
Less Treasury stock	( 275 •	111 651	—
Total Liabilities and Net Worth	\$43 935 473	\$12 141 629	\$7,601 163
Working Capital	\$13 117 862	\$ 3,167,190	\$2 570,356

\* Source: *Moody's Manual of Investments*, Industrials, 1941, p. 830, and *Annual Report of the Celotex Corporation* for the year ended October 31, 1951.

strength after the emergence of the company from the deep depression of the early 1930's and its reorganization. Funded debt decreased from 33 per cent of total liabilities and net worth in 1936 to 29 per cent in 1940 and to 12 per cent in 1951. This decline was registered in spite of an absolute increase in the amount of fixed debt. In three years, 1937, 1945, and 1947, long-term debt was increased by large amounts. In each case the rise was followed by debt reduction. Where fixed debt was heavy in 1936, it had reached a level fairly common or average for the manufacturing field by 1951. Preferred stock was also increased substantially in 1945, when it rose from \$3 million to \$5 million. No attempt has been made to reduce this item by sinking fund, but its relative importance and consequent investment risk has diminished as it dropped from 36 to 24 to 12 per cent of total liabilities and net worth. The enhanced financial strength as well as the unusual growth has resulted from a heavy plowback of earnings. Much but not all of this retention is reflected in the Earned Surplus. Some was transferred to capital stock on the occasion of the 1938 stock dividend. A part of the common equity growth arose from sales of stock.

Percentage balance sheets are in a broad sense ratio analysis.<sup>6</sup> They present the constituent assets and liabilities as ratios to the balance sheet total. Their value lies in their simple and direct picture of proportion. They give no clue, however, to growth or shrinkage of the absolute dollar amounts in the actual balance sheets and so take on additional meaning just as the summary of balance sheet changes does in relation to the original figures. Impressions gained from a study of the percentage balance sheets can be supplemented by referring to the dollar changes, which are stated here in round figures in the adjacent columns under B. By taking the dollar figures to the nearest hundred thousand (\$00,000) are omitted and a decimal is used to state the resultant figure in millions) the important changes are much easier to discern than in the original balance

<sup>6</sup> An interesting application of the percentage balance sheet is found in a study of 183 unsuccessful industrial corporations over the ten years prior to failure. Raymond F. Smith and Arthur H. Wmako, *Changes in the Financial Structure of Unsuccessful Corporations* (Urbana: Bureau of Business Research, University of Illinois, 1935). The proportion of current to fixed assets showed a persistent decline over the whole ten-year period (Chart 2, p. 20), the common stock equity shrank and long-term debt expanded percentagewise in the last three years (Chart 3, p. 23).

## THE CELOTEX CORPORATION

A—COMPARATIVE PERCENTAGE BALANCE SHEETS

B—SUMMARY OF BALANCE SHEET CHANGES IN DOLLARS (00,000s OMITTED)

C—TREND PERCENTAGES (1936 = 100)

	<i>A—Percentages</i>			<i>B—Changes</i>		<i>C—Trend</i>	
	1951	1940	1936	1951	1940	1951	1940
<b>ASSETS</b>							
Cash	13	9	12	48	2	662	119
U. S. Government securities	3	—	—	9	—	—	—
Notes and accounts rec. (Net)	15	18	18	42	9	468	184
Inventories	12	13	15	39	4	463	134
Total current assets	43	40	45	138	14	546	142
Land, including gypsum deposits	4	—	—	—	—	—	—
Plant & Equipment	79	—	—	—	—	—	—
Gross property	83	86	110	261	21	439	125
Less—depreciation & depletion	32	50	56	81	1	334	142
Net property	51	36	54	180	3	547	107
Investments	3	23	—	13	27	23,343	42,571
Deferred charges	3	1	1	12	1	2,204	245
Patents	—	—	—	—	—	100	100
Total assets	100	100	100	317	45	578	160
<b>LIABILITIES &amp; NET WORTH</b>							
Notes payable	—	—	—	3	3	—	—
Accounts payable	6	2	5	20	3	694	197
Accrued expense, interest, taxes	5	6	6	14	2	436	140
Provision for Federal income taxes	10	5	—	4	1	15,131	414
Less—U. S. Treasury tax notes	9	—	—	—	—	—	—
Sinking fund due within 1 year	1	1	—	4	—	—	—
Total current liabilities	12	14	11	39	8	649	197
Funded debt	12	29	33	19	10	215	110
Notes payable	—	1	—	1	1	—	—
Other fixed liabilities	—	1	—	—	1	—	—
Preferred stock	12	24	38	22	—	177	100
Common stock	2	5	4	3	4	337	238
Paid-in surplus	14	6	6	56	3	1,457	163
Earned surplus	47	21	8	179	20	3,168	437
Less—Treasury stock	—	1	—	1	1	—	—
Total Common Equity	63	32	18	237	25	2,233	307
Total liabilities and net worth	100	100	100	317	45	578	160
Working capital	31	26	34	99	6	507	124

Note Some totals do not add because of fractions dropped

sheets. Certain other points may be seen in these figures. It is apparent that during the 1936-1940 period, the \$2.5 million increase in the common stock equity and the \$1.0 million increase in funded debt financing went chiefly into the \$2.7 million increase in Investments with most of the remainder increasing working capital by \$0.6 million. As noted earlier, plant growth of \$2.1 million was financed largely with funds earned for depreciation.

**Trend percentages.** Another device for the analysis of successive balance sheets has been proposed by Gilman.<sup>7</sup> Like the summary of balance sheet changes, it stresses change between periods. Instead of stating the dollar amount or the per cent change, it gives ratios between each item in the particular balance sheet and the corresponding figure in the initial balance sheet. If these trend percentages are thought of as index numbers, it may be said that they are a series of index numbers worked out for each balance sheet account; the amount of each account in the initial year becomes the base, and so equals 100 for that series.

Thus, if such series were constructed for the various balance sheet items of Celotex Corporation, the index or percentage for each item would be 100 in 1936. Instead of calculating such annual trend percentages for the whole period, our last table shows the trend percentage figures for the two years 1940 and 1951 in the last two columns under C. These percentages tell something of the same story for the assets that we have already noted in connection with the percentage balance sheets. The growth of the current and fixed operating assets have kept in step for the longer period, although in the first four years (1936-1940) current assets increased faster (42 per cent) than either gross or net property (25 and 7 per cent, respectively).

In passing, let us note that either here in connection with the trend percentages or in analyzing the dollar changes in the chief assets— inventories, receivables, and gross plant—the changes can be compared with appropriate price indexes. Wholesale commodity price indexes were 2.7 per cent lower in 1940 and 123.0 per cent higher in 1951 than in the year 1936. Wholesale building material prices rose rather more rapidly in these periods. They were 9.3 per cent higher in 1940 and 160.0 per cent higher in 1951 than in 1936. Price changes explain only a part of Celotex's rising assets.

<sup>7</sup> Stephen Gilman, *Analyzing Financial Statements* (New York: Ronald Press, rev. ed., 1934), Chapters 12-14.

The growth of the chief liability items can be visualized by setting them beside the trend per cents for current and total assets:

(1936 = 100)	1951	1940
Current assets .....	1546	142
Total assets .....	578	160
Current liabilities .....	649	197
Funded debt .....	215	140
Preferred stock .....	177	100
Common stock equity .....	2,233	307

The more rapid growth of current debt compared to that of either current or total assets points to a trend condition unfavorable to liquidity; but, as we have seen, the actual current position continued sound. The extraordinary growth of the common stockholders' investment while funded debt and preferred stock were growing more slowly than assets points towards growing financial strength although not in such clear language as the percentage balance sheets.

In the light of these illustrative figures, let us study the advantages claimed for this method of studying balance sheet changes. In comparing the trend method of balance sheet analysis with the ratio method, Gilman states the following as advantages of the former:

1. It furnishes a bird's-eye view of the problem.
2. The facts are presented in comparative form.
3. The trends are shown vividly.
4. The figures are easier to interpret.
5. Less highly trained help is required to work out the figures for analysis, and the calculations can be made much more quickly.
6. There is less liability for gross error because the resulting percentages are partially self-auditing through comparison with the actual figures.<sup>8</sup>

Examination of our illustration suggests the chief limitations of trend percentage analysis are:

1. Undue emphasis upon the variation of the least significant members of the balance sheet, because they ordinarily vary the most percentagewise. A 10 per cent increase in a major account such as Inventory is likely to be far more important than a 1,000 per cent increase in some minor account, such as Deferred Charges, Sundry Debtors, or some small reserve account. This point is illustrated in the 1951 indexes for Investment and Deferred Charges which were

<sup>8</sup> Stephen Gilman, *Analyzing Financial Statements* (New York: Ronald Press, 1925), p. 121.

23,343 and 2,204, respectively. Each was only 3 per cent of assets in the final year. Even among the more significant accounts, a 20 per cent change in Cash is likely to be less significant than a 10 per cent change in Inventory—the former amount usually being so much smaller than the latter. In our illustration the 1951 index for cash was 662, considerably higher than for any other major asset, yet it rose only from 12 to 13 per cent of total assets over the whole period. In this respect, the simple summary of balance sheet changes has the advantage in showing absolute changes and the percentage balance sheets in measuring relative changes.

2. It emphasizes change in relation to the amount in the initial, or base, year, which is not necessarily normal. Thus, if inventory were unusually low and receivables normal in the base year, any tendency towards the usual proportions would give the impression of extreme change in the inventory.

The chief utility of trend percentages is likely to be only in their application to the major items in the balance sheet and in comparing items where some relationship or balance is expected, as in the case of inventory, receivables, and plant, or debt and net worth. If trend percentage changes are being used for the purpose of detecting undesirable changes in balance, a more direct check between the items themselves and whatever base they should be related to, such as sales or total assets, is the more logical way to detect whatever disproportion may have developed. Thus, if total debt increases its trend per cent from 100 to 200 whereas net worth only increases from 100 to 110, a "dangerous tendency" is noted, but if the debt has merely risen from one ninth of the net worth to one fifth of the net worth, as illustrated in the figures below, the change need not be alarming.

	Dollars	Trend %s		
	1937	1940	1937	1940
Debt	10	20	100	200
Net Worth	90	99	100	110

The ratio of debt to net worth not only tells whether or not the "dangerous tendency" is developing but it directly answers the central question involved, namely, as to the net effect upon the balance, or proportion, of the changing amounts portrayed by trend percentages.

Another example of these "undesirable tendencies" not supported

by analysis is found in a table given in the annual report of a carpet company. The table was designed to show growth over a five-year period, but the (trend) percentages might have made a bad impression as presented.

	<i>Growth — Past 5 Years</i>		<i>Increase Per Cent</i>	<i>Millions</i>
	<i>1946</i>	<i>1951</i>		
Working Capital	\$4,670,602	\$7,605,191	63	\$2.9
Plant and Equipment	1,993,684	4,835,367	143	2.8
Long-term Debt	1,456,000	2,800,000	92	1.2
Net Tangible Assets	5,616,046	9,975,218	78	4.4

Plant and equipment had a more rapid rate of growth than working capital, 143 and 63 per cent respectively. Such a disparity might augur a growing lack of liquidity. Similarly, the more rapid growth of long-term debt (92 per cent) as compared to that of net tangible assets (78 per cent) suggests a growing debt burden. Yet if we examine the dollar changes, not found in the original table, we find that actually working capital and plant growth were about equal (\$2.9 million and \$2.8 million, respectively), representing a fair balance for a manufacturing concern. As for the 92 per cent increase in long-term debt, it amounted to but \$1.2 million or less than one third of the \$4.4 million increase in net tangible assets.

**Value of brevity.** The percentage balance sheets have emphasized the utility of short and significant figures as compared with the cumbersome long ones in the original balance sheet. Most statistical agencies now omit the cents in reporting statements. In analytical work, not only may time be saved, but the readability and meaning of the balance sheet may be increased by using the shortened, significant amounts in a condensed form. Thus, the Celotex Corporation figures for the three years might be presented as on page 185.

Condensation may conceal some details of interest by omitting some minor balance sheet items. But condensation plus the clipping off of the figures throws major tendencies into high relief with a minimum of clerical effort. It constitutes one of the easiest and most economical devices for reducing comparative balance sheets to a useful filing form. This simplifying device, unlike others mentioned, requires no computation. If the significant figures (usually four, instead of the three used above, will be enough) are retained, they will be sufficient for calculating other ratios and data and for the construction of charts.

**CELOTEX CORPORATION**  
**CONDENSED COMPARATIVE BALANCE SHEET**  
As of October 31  
(\$ -- 00,000's omitted)

	<i>Assets</i>	1951	1940	1938
Cash		5.9	1.1	.9
U. S. securities		1.0	-	-
Receivables (net)		6.4	2.2	1.3
Inventories (lower of cost or market)		5.5	1.6	1.2
Total current assets		18.8	4.9	3.4
Plant and equipment		36.5	10.4	8.3
Less: depreciation and depletion		14.1	6.0	4.2
Net property		22.4	4.4	4.1
Investments		1.5	2.7	-
Deferred charges		1.2	.1	.1
Total assets		43.9	12.1	7.6
 <i>Liabilities and Net Worth</i>				
Notes payable		-	.3	-
Accounts payable		2.7	.7	.4
Accrued expenses, etc.		2.0	.6	.5
Provision for Federal income taxes		4.5		
Less: U. S. tax notes		3.9		
		.6	.1	-
Sinking fund due within year		.4	-	-
Total current liabilities		5.7	1.7	.9
Funded debt		5.4	3.5	2.5
Other fixed liabilities		-	.2	-
Total liabilities		11.1	5.4	3.4
Preferred stock		5.1	2.9	2.9
Common stock		.9	.6	.3
Paid-in surplus		6.3	.7	.4
Earned surplus		20.5	2.6	.6
Less Treasury stock		-	.1	-
Net worth		32.8	6.7	4.2
Total liabilities and net worth		43.9	12.1	7.6
Working capital		13.1	3.2	2.5

**Summarizing balance sheet changes.** The statement of dollar changes in the balance sheet, like the percentage balance sheets, could not be readily attached to the original comparative statement because of the limitations of space. The effectiveness of their presen-

tation is also reduced because of their separation from the titles by three columns of percentages. Their story would seem to be self-evident, but the following summary, or statement of source and use of funds, shows how a suitable form with some condensation can clarify the recital:

### SUMMARY OF BALANCE SHEET CHANGES

1936 to 1940

(\$ -- 00 000's omitted)

#### *Sources of Funds*

##### Increases in liabilities

###### Current

Notes payable	3
Accounts payable	3
Accrued expenses	2
Federal income taxes	1
Total	8

Funded debt	10
Other fixed liabilities	2

Total liability increases	20
---------------------------	----

##### Increases in net worth

Common stock	4
Paid-in surplus	3
Retained earnings	20
Total net worth increase	26
Total sources	<u>46</u>

#### *Use of Funds*

##### Increases in assets

###### Current

Cash	2
Receivables	9
Inventories	4
Total	14

Net property	03
Investments	27
Deferred charges	1
Treasury stock acquired	1
Total used	<u>46</u>

Note Some totals do not add because of fractions dropped

1940 to 1951

	<i>Sources of Funds</i>
Decrease in investments	12
Increases in liabilities	
Current	
Accounts payable	20
Accrued expenses	13
Federal income taxes	4
Sinking fund liability	4
Total	42
Funded debt	19
Total liability increases	61
Increases in net worth	
Preferred stock	22
Common stock	3
Paid-in surplus	56
Retained earnings	179
Treasury stock disposed of	1
Total net worth increase	261
Total sources	335

*Uses of Funds*

Increases in assets	
Current	
Cash	48
U. S. securities	10
Receivables	42
Inventory	39
Total	139
Net property	180
Deferred charges	11
Decrease in debt	
Notes payable - current	3
Long term notes	1
Other fixed liabilities	1
Total used	335

In order to make this summary in a "source and application of funds statement" in the form approved by the accountant, the following changes would be necessary:

1. Cash dividend distributions would be introduced as one of the applications, or uses, of funds. Then the total net income is shown under *Sources of Funds* rather than the net Retained Earnings.

2. Bond or other security retirements would be shown at their purchase cost. Any gain (or loss) from the purchase of bonds at less (or more) than par would be subtracted from/(or added to) the amount (as shown above) of funds used, to reduce Funded Debt. Inasmuch as such gain (or loss) is now included in the change in Earned Surplus, that amount would be removed from the total. Similarly, the various balance sheet changes resulting from a sale of securities are brought together, as in the case of an increase in both stock and paid-in surplus from a sale of stock.

3. As suggested earlier in this chapter, related balance sheet changes may be grouped together rather than left as unrelated items. For example, the sale of a piece of real estate may result in a decrease in that account and in the associated reserve for depreciation and in the earned surplus for the amount by which the sale price differs from the net book value (cost less depreciation). By bringing these three items together, the net inflow of funds from the sale will be clearly seen. The effect of separating the gain or loss on such transactions as this and some of those mentioned under the preceding heading from the total increase in earned surplus is to leave a net income figure under the *Sources of Funds*, which excludes unusual items of gain or loss.

4. Instead of showing the net change in the book value of the property and plant as was done in the illustrative summary, the separate changes in the Gross Plant and the Reserve for Depreciation (or Accumulated Depreciation) would be stated. The change in Gross Plant shows the net effect of purchases, sales, and retirements at cost. The Reserve for Depreciation will be increased by the amount of depreciation expense shown in the income account. As explained earlier, such depreciation expense is not strictly speaking a source of funds but rather the amount collected in the form of revenues from customers to cover such expense, which provides funds in excess of the amount reported as net income. Some decreases in the depreciation reserve may result from the sale or retirement of assets.

The amortization of other noncurrent assets, such as Patents or Deferred Charges, which is reflected in the earnings statements as so much expense are similarly a source of funds in the same indirect manner. The consumption of such values in the processes of production, even though not strictly a source of cash, is as truly a "source of funds" as the sale of inventory. The customer buys more than bare

merchandise. He is purchasing the services rendered by the business, which entail the consumption of values that may flow through the noncurrent assets as well as the working capital section during a given fiscal year.

5. Various transactions that represent no flow of funds through the business may be eliminated even though they represent balance sheet changes. Chief examples are (a) transfers to and from the Earned Surplus (or Retained Earnings) account to such associated surplus reserves as the Reserve for Contingencies, and (b) exchanges or conversion of one type of securities into another. Thus, bonds may be converted into common stock under a conversion option. Or, one security may be exchanged into another under a reorganization or recapitalization plan.

**Method of using statements of comparison.** A summary of the more important questions to be asked in a study of the balance sheet changes will read:

1. What changes are taking place in the working capital position, and is that position growing stronger or weaker?
  - a. Are there any considerable increases in cash or marketable securities indicating a surplus of working funds?
  - b. Are the changes in the amount of receivables in proportion to changes in the volume of business, or does there appear to be an accumulation of uncollectible accounts taking place?
  - c. Do the changes in inventory appear to indicate an untimely accumulation of stock? In a period of depression this condition is frequently evidenced by a concurrent increase in inventory and decrease in receivables.
  - d. Are there sufficient increases in current indebtedness, particularly notes payable, to show a possible need for additional working capital?
  - e. Have the current liabilities increased out of proportion to the current asset increases? In order to maintain an existing two-to-one ratio, the latter must increase twice as much as the former; to maintain a three-to-one ratio, three times as much; and so on.

2. What significant changes, if any, have occurred in the fixed asset group?

- a. Plant and equipment, or land and buildings. If the changes are increases, do they represent improper accounting for repairs, un-

profitable additions, or profitable expansion? If the changes are decreases, do they represent allowances for depreciation, or the sale or loss of a part of the asset? If the decrease is attributable to the former cause, the question is whether the allowance is inadequate, reasonable, or excessive; if to the latter, the question is whether profitable or unprofitable property has been parted with.

b. Changes in the Investments account call up questions similar to those listed for the preceding item, namely, as to whether the change is a profitable one; but there is no depreciation allowance to be accounted for. It would also be desirable to ascertain, if possible, whether the value of the investments is greater or less than it was at the time acquired.

c. If the amounts due from allied companies are on the increase and are of significant size, an attempt should be made to learn the nature and financial condition of the concerns that owe.

d. Intangibles ordinarily remain fairly constant from year to year. If there are increases, do they represent *bona fide* purchases or an improper bookkeeping entry inflating the item for the effect which it will have on surplus? If the decreases are considerable, they should be taken into account in the interpretation of the surplus.

3. Do the changes in capitalization and surplus represent growing strength or weakness?

a. Does the bonded debt remain constant or show a tendency to increase, or does the management seek a steady reduction of this debt? On this point, changes over a period rather than changes for individual years are significant. In the Celotex Corporation illustration, we also saw that even where an absolute increase in debt took place, financial strength might be on the mend as the result of a more substantial growth of net worth.

b. Do the increases in capital stock represent sales of new stock or stock dividends? Do the increases, if any, in preferred stock make that amount disproportionate to the interest of the common stockholders?

c. What policy on the part of the management do the changes in surplus seem to reveal? Are the sums retained from earnings negligible, moderate, or large?

d. Are there any considerable changes in surplus reserves which

require attention in interpreting the other accounts that represent the stockholders' interests?

**Changes in book value per share.** Because so much interest centers in the growth of the common stock equity, special study of how the growth takes place is useful for investment and economic analysis. Changes are more vividly seen and appreciated when stated on a per share basis. The accompanying table sets forth the remarkable rate of growth in per-share book value of the common stock of Celotex Corporation, the figure rising from \$1.95 at the end of the 1935 fiscal year to \$31.28 in 1951.

#### CFLOTEX CORPORATION

##### BOOK VALUE EARNINGS AND DIVIDENDS PER SHARE adjusted for stock dividends

Fiscal Year	Book Value per Share	Increase in Book Value during Year	Retained Earnings per Share	Earned per Share	Dividends
1935	\$ 1.95	-		-	-
1936	2.40	\$ .45	\$ 1.10	\$ 1.10	-
1937	3.89	1.49	1.48	2.0%	\$ .60
1938	3.05	.06	.60	.60	-
1939	5.01	1.09	.95	.95	-
1940	5.98	.94	.96	.96	-
1941	7.61	1.63	1.42	2.55	1 12½
1942	8.46	.85	.49	1.24	.75
1943	8.68	.22	.04	.54	.50
1944	8.00	.22	.03	.53	.50
1945	9.49	.59	.07	.57	.50
1946	15.53	6.04	3.17	4.17	1.00
1947	21.13	5.60	5.47	6.59	1 12½
1948	26.66	5.53	5.45	7.20	1.75
1949	27.10	.44	.36	1.46	1.50
1950	29.16	2.06	2.03	3.03	1.00
1951	31.28	2.12	2.07	3.57	1.50
Totals		\$29.33	\$25.69	\$37.54	\$11.85

An examination of the table brings out two aspects of analytical work. The first is the common adjustment of per share figures for stock dividends and split-ups so that the figures for successive years will be readily comparable. Thus, the per share data for years prior to a 100 per cent stock dividend (or two-for-one stock split-up), such as Celotex had in 1939, would be divided by two so that they would represent the same fractional interest in the common stock equity as

that of shares in subsequent years. This adjustment makes the figures for these three series prior to 1939 suitable for tracing the per share history of the present outstanding shares. Investment services and annual reports frequently report per share figures on this "adjusted" basis.

The second task is that of comparing the increases in book value per share with the amounts shown as retained earnings in order to find the reason for any material differences between the two figures. The two chief reasons for differences are gain and loss items not included in the reported net income per share, which nevertheless change surplus and book value, and sales or repurchases of common stock at amounts differing from book value. The first class of item is illustrated here in 1945 when Celotex Corporation sold certain of its shareholdings in CertainTeed Products Corporation at a profit over book value of \$503,886. This amount did not appear in earnings but was credited to paid-in surplus. Lesser gains were realized and treated in the same manner in 1939 and 1943 (\$56 thousand and \$132 thousand, respectively). The analyst will compare the apparent earnings retained (earnings reported per share less dividends) and the changes in book value per share to discover any material gains or losses not reflected in reported retained earnings, because they might influence his judgment of the company's earning power and appreciation possibilities.

The other factor, sales of stock at a figure other than book value, was much more important in some years in increasing book value than the reported retained earnings. Common stock was sold at figures that substantially increased the book value per share. In 1946, book value rose by \$6.04, although retained earnings were but \$3.17. The difference of \$2.87 is explained by a sale of common stock at a figure substantially in excess of book value (100,000 shares at \$36.75 less selling expenses of \$2.39 per share), so that the average book investment of all shares increased by that amount. This one item explains most of the \$3.44 excess of book value growth (\$29.33) over the amount reported as retained earnings (\$25.69) for the 16-year period. Additional sales of common stock at more than its book value had a similar but much less important effect in increasing book value in the years 1939, 1943, and 1947 more than the amount reported as retained earnings per share.

On the basis of financial theory, it could be argued that a sale of shares at a price in excess of book value might merely represent the realization of an unstated good will or asset undervaluation and so might not profit the existing stockholders. Actually, by taking advantage of stock market fluctuations, a skillful financial management might so time the sales of its common stock as to realize advantageous prices that would *enhance* the value of existing shares. On the other hand, the sale of stock at inopportune times can *dilute* both book and real per share values. Herein lies the advantage to the corporation and its common stock holders in the issuance of common stock indirectly by offering bonds or preferred stock convertible into common at prices substantially higher than could be realized by a direct and immediate sale of common shares for cash. Convertible issues are commonly given the option of converting into common at prices *higher* than the market price at the time they are sold. Common stock is typically sold for cash through rights to existing shareholders at a price *lower* than the market price at the time of sale. Thus, when, and if, convertible securities are later exchanged into common, the corporation usually receives more per share of common than would have been possible if the common had been sold for cash.

When earning power is closely related to the book investment as in the case of many regulated public utilities, the study of book value growth or dilution is especially significant. In other cases, where the relation between book investment and earning power is more variable, the analyst must ask to what extent the changes in book value are likely to result in corresponding changes in the more important factor of earnings per share. In answering this question, he will be guided by the uses to which the funds are being put, the experience of the company, the state of the industry, and the general business outlook.

A corporation may dilute book value but enhance earning power per share. Thus, a railroad with a book value of \$120 per share might sell new shares at \$60 but by investing the latter sum in new diesels to replace steam locomotives earn more on the new \$60 than it did on the old \$120 per share. On the other hand, a young industrial with high hopes of profits from future operations might find that even though it could sell shares at considerably more than book value, the price would be low relative to earnings expectations. In order to

avoid a dilution of earning power per share, such a company would prefer to issue senior securities with a limited return or finance growth at a slower pace from retained earnings.

In our illustration, Celotex Corporation, in spite of the risks of the building supply industry, found it advantageous to finance some of its expansion with bonds and preferred stock rather than to rely solely upon common equity growth. Most of its equity money came from retained earnings rather than the sale of common shares. Even some of the latter were sales to officers, designed to provide executive incentives, as much as it was to acquire funds.

The high rate at which book value of the common stock increased during the first couple of years was attributable in substantial part to the heavy "trading on equity" following reorganization in 1935. (Actually, the retained earnings of \$1.10 in 1936 increased book value only \$.45 because reorganization expenses were written off against surplus in that year. If these had been accrued and assessed against the initial book value of \$1.95, that initial figure would have been only \$1.30.) As seen in the percentage balance sheets presented earlier, the common stock equity in 1936 was but 18 per cent of total liabilities and net worth, which meant that over \$5 of assets were at work for each dollar of equity money taken at book value. The early years of the period, except for 1938, were also marked by general business recovery. During the war years, 1942-1945, profits and growth were limited by war conditions and the excess profits tax, although book value continued to rise from \$7.61 to \$9.49, or 25 per cent. The postwar boom in residential building registered another vigorous rise in book value, especially in the three years 1946-1948, when book value per share rose from \$9.49 to \$26.66, or 181 per cent. In view of the history of large cyclical fluctuations in the building industry, such a favorable period as is shown in the 16-year period covered in the table would be expected to be followed by reduced activity even though this particular company might enjoy an advantage as compared with the industry because of its considerable sales for repair and maintenance work as against new construction. Similarly, its vigorous growth trend as compared with the industry might prove a *relatively* favoring factor in any industry recession.

Although a cautionary note is sounded here against identifying growth in book value with growth in earning power, probably book value has been underemphasized rather than overemphasized in the

literature of analysis Popular attention has been focused on the income account.

As in the case of earnings statements, the inflation influence should be recognized With regard to reported income, it has been pointed out that during a period of price inflation, real profits are overstated The exaggeration tends to disappear as inventory prices stabilize and depreciable assets are replaced at the new and higher price level Similarly, in reading book value figures, the catching up process for the balance sheet must be recognized The rise in the common equity per share will be especially large for industrial equities preceded by heavy debt and preferred stock

Moreover, even where the price inflation element is absent, the forces of business boom tend to cause business men to carry the expansion process farther than is profitable As a consequence, growth in the common equity in the later stages of a boom may show no corresponding expansion in earnings Expansion in an industry may be carried to the point where the profit rate will decline even without the added factor of cyclical variation and decline which particularly afflict those industries producing capital equipment and consumers' durable goods

**Conclusions.** Three general techniques for treating balance sheet material in order to facilitate a study of changes from period to period have been presented in this chapter The first is a summary of balance sheet changes which may be simply the actual dollar changes added to a comparative balance sheet These changes may be separately stated and, when arranged and elaborated are called a Statement of Source and Application of Funds The merit of such a report lies partly in its simplicity and partly in the fact that it throws the changes into clear relief The comparative balance sheet has the facts about changes but the mind does not take them in so readily as when they are stated as changes Even a statement of changes still leaves the reader to give meaning to the changes it summarizes.

The percentage balance sheet, the second technique, has also the merit of simplicity in method and brevity in form Where the original balance sheet and the statement of its changes describe absolute dollar amounts, this second device tells only one thing—the proportions that the various items bear to the total With such figures, improvements or deterioration in financial condition are more readily detected This type of presentation is particularly valuable when the

whole balance sheet is expanding or contracting, for then relative change in relation to the other items, rather than absolute change, is more important and less easily discovered than in a static business.

Finally, trend percentages are employed by some to show the rate of change of the individual balance sheet items. By showing the relative change of individual items, they may disclose unequal change, the significance of which remains to be weighed and interpreted by the reader.

In practice, much of this detail can be omitted because of the little it adds to many statements, or must be omitted because the additional effort required is too expensive for the results achieved. The more experienced reader can often dispense with a statement of changes, the original figures being adequate. The most generally valuable device is likely to be the percentage balance sheet, and it will be most frequently employed by a management intensely interested in the details of its own business, or in the more elaborate type of investment study where intensive scrutiny is justified by the financial importance of the decisions to be arrived at.

## CHAPTER IX

### Analysis of the Income Statement

**Significance of the income statement.** Just as the balance sheet is said to be the statement of primary interest to the short-term creditor, so the income statement is given first place by the investor. Investors wish more than the mere maintenance of the principal sum they have placed in the business, because they purchase a corporation's securities for the income over a period of years. The failure of income, even though the property remains unimpaired, is usually sufficient to bring about a serious fall in the market value of the security held.

Actually, both statements are essential to a well-rounded view. High earnings may be achieved by incurring excessive debt which the investor can only appreciate by examining the balance sheet. On the other hand, even current creditors are likely to have a continuing relation with a business. Adequate profitability can provide snews of financial strength for them if a business incurs too much debt or meets with temporary misfortune, such as inventory losses. Commercial banks with their increased extension of intermediate loans have come to have a heightened interest in and dependence upon earning power. Furthermore, interstatement comparisons of such items as sales and receivables, cost of goods sold and inventories, and depreciation and fixed assets aid the analyst in evaluating both balance sheet and reported earnings.

**Gross operating revenues or sales.** The opening caption of the well-constructed income statement is ordinarily "Gross Operating Revenues" or "Sales." The figure should show the gross amount realized from the sales of services or goods that represent the regular operations of the business.<sup>1</sup> Often the title "Net Sales" is used as the

<sup>1</sup> Fuller discussion of the meaning of revenue may be had in H. A. Finney and H. E. Miller, *Principles of Accounting—Intermediate* (New York: Prentice-Hall, Inc., 4th ed., 1951), p. 600-605.

initial figure to show that the gross sales have been reduced by deductions for returned goods, allowances, and sometimes cash discounts. These subtractions are primarily of interest to management, and the net figure is regarded as a more valuable base for beginning an analysis. Management will, however, carefully scrutinize these deductions and seek an explanation if they appear unusually large. Gross Income is an undesirable title for Sales because it does not have a well-defined meaning. It has been used to include sales plus miscellaneous income from nonoperating sources or a combination of net operating income plus nonoperating income, such as investment income. Occasionally, but not often, only a Gross Profit or Gross Earnings figure is published in order to conceal sales and gross profit data from competitors.

Some uses of Net Sales as a measure of business volume have been suggested already in its relation to other items, particularly inventory and receivables. The figure itself is of first-rate importance when traced from year to year. Over a substantial period, the sales will be examined for evidence of the future trend and of year-to-year stability. A graph showing the course of yearly sales is especially useful, because a line plotted on a chart is even clearer than a tabulation of figures. Similar figures for comparable concerns will aid in the interpretation of the trend. (See pages 286 and 288 below.)

Four factors must be considered in the interpretation of the year-to-year dollar volume of business: (1) the profitability of particular sales increases or decreases; (2) the trend of business in general; (3) the trend of the particular line of business in which the concern is engaged; and (4) changes in the level of prices at which goods are being sold. The first point is often overlooked, sales being thought of as an end in themselves, although additional sales may be achieved at such a high cost or at such a low price as to make them unprofitable. The matter is more properly discussed later, but when sales figures are studied, the related profit angle should be kept in mind.<sup>2</sup>

<sup>2</sup> Thus, an analysis of a food packer reports relative to sales that the company has eliminated certain lines of dried fruits and canned fruits and vegetables because the profit prospects appeared relatively unattractive. The idea that cost accounting should apply not only to production costs but also to selling expense, in order that sales that cause selling expenses in excess of the gross profit margin may be avoided, has not received as much consideration as it would seem to warrant. For a valuable point of view, see J. Brooks Heckert, *The Analysis and Control of Distribution Costs* (New York: Ronald Press, 1940).

Because achievement is relative, the sales attained by a business should be studied in the light of general business conditions. Depression and boom constitute external factors, and growth and shrinkage that result from them do not have the same significance as when they flow from the internal factors, or management. Similarly, account must be taken of such conditions as are peculiar to the particular industry. Comparison of sales and earnings results with those of similar concerns is for the purpose of discovering how effectively the business has taken advantage of fair weather and how skillfully it has weathered economic storms both of business generally and of the specific kind of industry.

A failure to note the fourth factor may cause undue optimism during a period of rising prices and unnecessary pessimism during a period of declining prices. By finding the per cent of change in the price of goods sold, the reader can estimate the amount of change attributable to the price factor, and, by inference, the part to be ascribed to a change in the number of units sold. The following is a hypothetical case in which prices in 1949 and 1950 are assumed to be 110 per cent of what they were in 1948. By treating this index as a percentage and dividing it into the sales figure, the analyst obtains the amounts in the last column, which show what the sales volume in each of the years would be if stated at the same prices as those in 1948.<sup>3</sup>

Year	Sales at		
	Annual Sales	Price Index	1948 Prices
1948	\$100 000	100	\$100 000
1949	\$110 000	110	\$100 000
1950	\$110 000	110	\$109 091

The chief difficulty in employing this method to discover how far the physical volume has changed lies in the selection of an appropriate index. Inaccuracy in results may obtain (a) if an index is chosen that reflects the prices of a somewhat different selection of articles from that sold by the business analyzed, or (b) if the weight

<sup>3</sup> Price data and index numbers for prices of various kinds are widely available through various statistical agencies and trade journals. The work of the Bureau of Labor Statistics of the United States Department of Labor is notable and well known. Standard and Poor's *Standard Trade and Securities Statistics* and the Department of Commerce's *Survey of Current Business* bring together in convenient form a great deal of this and other material from many different sources.

given to the different prices in the index differs from the proportions in which the various items are sold by the business; or (c) if a wholesale price index is used when retail trade is being analyzed. Some concerns come to the assistance of the reader by publishing physical volume figures. Some of the retail grocery chains report tonnage of merchandise moved; other concerns, the units of product sold. Such figures may have a variable meaning, as when a grocery chain adds meat departments in its various stores over a period of years, meats probably having an above-average value per ton; or when a shoe manufacturer, such as Endicott Johnson Corporation, reporting pairs of shoes sold, notes an increasing proportion of lower-cost canvas footwear in its sales; or when an automobile manufacturer, such as General Motors Corporation, reporting number of automobiles sold, shows an increasing proportion of its cars sold in the Chevrolet, or low price, class. Allowance should be made for changing meaning of either deflated dollar sales volume, through the price index device, or actual figures on physical volume sold.

It is necessary to watch for factors that may impair the comparability of the sales or revenue figures. Occasionally, a nonoperating profit or gain is placed here through inaccurate accounting. An example would be the inclusion of the sale of factory equipment, or other fixed assets, in the regular sales figure. Sometimes the operations of formerly separate subsidiary companies are merged with the parent company's business, but no specific notice of the merging appears in the report. Such a possibility can be detected by an examination of the changes in the fixed assets during the period under review.

**Operating costs.** The operating expenses, following the revenue figure, are frequently stated as a single sum, thus:

Gross Operating Revenues . . . . .	\$ . . . . .
Operating Expenses . . . . .	<u>                </u>
Net Operating Income . . . . .	\$ . . . . .

This form would be suitable for a railroad, utility, or other business selling services rather than merchandise. It is not to be mistaken for the following form sometimes used by merchants who do not wish to state the amount of their sales.

Gross Earnings . . . . .	\$ . . . . .	to
Operating Expenses . . . . .	<u>                </u>	<u>nd</u>
Net Operating Profit . . . . .	\$ . . . . .	

The gross earnings here represent the margin earned between the sales and the cost of goods sold, and a more satisfactory condensed form for a mercantile or manufacturing concern would read:

Net Sales .....	\$ .....
Cost of Goods Sold .....	\$ .....
Gross Trading (or Operating) Profit .....	\$ .....
Selling and Administrative Expense .....	\$ .....
Net Operating Profit .....	\$ .....

This last form, although not generally used in published reports, is of particular interest in showing the relation of cost to selling price. The data would be of value in explaining changes in net earnings.

The margin of gross profit, when expressed as a per cent and read in conjunction with the net profit figure, tells the banker or mercantile credit man who is familiar with trade practice whether a sufficient margin of profit or "mark-up" is being taken. When a cut-rate policy is being pursued, the net profits will show whether the policy is successful. Where the mark-ups are known and readily available, as in a well-organized department store, the sales may be used by the management as a basis for estimating gross profits before inventory is taken.

A similar use is made of such figures by persons wishing to check the correctness of the value set upon the inventory—a method sometimes called the "gross profit test of inventory." The cost of goods sold in the period preceding the date of the balance sheet is estimated by subtracting the customary per cent of gross profit from the sales. This estimated cost of goods sold is, in turn, subtracted from the sum of the purchases during the period and the inventory at the beginning of the period to obtain a figure for final inventory which may be compared with the amount stated as inventory in the balance sheet at the end of the period. If the figures do not approximately agree, a reason is sought, particularly if the result points to a probable overstatement of inventory in the balance sheet. A disagreement will, of course, exist if the assumed per cent of gross profit used in the calculation is incorrect.\*

\* The writer recalls a case where an accountant, asked to prepare an income tax return, applied this test and discovered a gross profit margin so small that he concluded final inventory was being understated in order to avoid the high war taxes then applicable. He refused to permit his name to be connected with the return until an adequate explanation was forthcoming. His surmise proved

**Cost of goods sold.** The common accounting practice in figuring the cost of goods sold is likely to introduce an element of error at this point. The usual practice is not to keep a current record of the cost of merchandise as sold, but to add the initial inventory to purchases made during the year and infer that this sum less whatever stock is left over at the end of the year is the cost of the amount sold. The resulting form for figuring the cost of goods sold for a merchandising concern is as follows:<sup>5</sup>

**COST OF GOODS SOLD**

Inventory at the Beginning of the Year	\$12,000
Purchase During Year	<u>60,000</u>
Total to Account for	<b>\$72,000</b>
Inventory Remaining at End of Year	10,000
Cost of Goods Sold During Year	<b>\$62,000</b>

For the sake of simplicity, let us assume that in the above illustration all the goods cost \$10 per unit. The purchase of 6,000 units added to the 1,200 units on hand at the beginning of the period gave 7,200 units to be accounted for. On taking stock at the end of the year, 1,000 units costing \$10,000 are found on hand. Consequently, it is figured, in the absence of a perpetual inventory, that the other 6,200 units were sold. But the inventory is figured in dollars, and should it have to be reduced from the cost figure of \$10,000 to a market price of, say, \$5,000 the resulting *cost of goods sold during the year* by the above method would appear to be \$67,000, which is \$5,000 more than it was in fact. What happens is that the market depreciation of an unsold inventory is treated as a part of the cost of goods sold during the preceding period, and the profit for the period is reduced by the excess of cost over market price for the final inventory, which is not a realized loss until sold in the following year.

Although the form shown above for finding the cost of goods is for a merchandising business, the same factor of error would be present

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incorrect. What had happened was that inventory at the beginning of the year had been overstated in order to permit a strong statement for credit purposes at that time. The manner in which the one miss-statement would equal the other in effect is explained in the succeeding paragraphs.

Merchants sometimes detect the theft of merchandise or cash receipts because their profit and loss statement shows a margin of gross profit that is too small.

<sup>5</sup> Examination of the detailed statement of the cost of merchandise for manufacturing concerns in which materials, direct labor, and overhead are given is so generally confined to the private eye of the management that the form and possibilities of the statement are omitted here.

for a manufacturing concern whenever final inventory was reduced below cost at the end of the accounting period because market value was less than cost.<sup>6</sup>

A better practice would be to show the inventory at cost in this computation, and then show the loss on depreciated inventory as a separate loss adjustment. The result of the practice of valuing inventory at the lower of cost or market value is that during a period of falling prices, market valuation prevails, and the profit and loss statement anticipates unrealized losses, making it possible for the business to show immediate profits as soon as prices stabilize, even though it is selling high-priced stock bought in the preceding period. When prices are rising, however, cost valuation prevails, and profits (unlike losses) are reported in the period of sale. The apparent gross margin may be increased if at any time an important part of the LIFO inventory carried at the lower costs of previous years is liquidated, thereby realizing upon the appreciation of the intervening period. A nonrecurring type of gain is realized from such cashing in on inventory appreciation.<sup>6</sup>

**Cost of goods sold under LIFO.** Earlier reference has been made to the use of LIFO (last-in-first-out) as it affects the balance sheet and working capital analysis. When the Cost of Goods Sold is the cost of those units of merchandise purchased last, the final inventory will show the cost of the earlier purchases. In years of rising prices, this accounting procedure shows inventories at a lower figure and the Cost of Goods Sold at a higher figure than under other conventional methods such as the taking of inventory at the lower-of-cost-or-market or a perpetual inventory employing FIFO (first-in-first-out) or average cost.

Inasmuch as LIFO tends to show lower reported profits during a period of rising prices, it became increasingly popular during the inflation of the 1940's after its use became permissible for income tax purposes. If initiated at the beginning of such a period, it eliminates the illusory profits of inflation and taxes upon such profits at least in part. During an ensuing deflation, the previous accumulation of an inventory at low costs eliminates at least in part the customary losses from declining inventory prices. The effect is to stabilize re-

<sup>6</sup> Textron, Incorporated stated in its 1951 annual report that the Cost of Sales (Cost of Goods Sold) was after the deduction of a nonrecurring profit of \$1,579,000 from the reduction of its LIFO inventory base.

ported earnings.<sup>7</sup> Until such time as the income tax regulations are changed, the results will be less happy for a corporation adopting LIFO at the beginning of a period of deflation, because it will result in an inventory carried at a cost in excess of the declining market and earnings that fail to reflect the loss of inventory value.

The use of LIFO is greatly reducing if not destroying the comparability of earnings statements of different companies even within a given industry. Even when two concerns both use LIFO, its effects may differ because they (a) apply it only in part to different departments or products, (b) differ in the year of adoption, and (c) acquire their inventory in different years at different prices.<sup>8</sup> Fortunately for the investment analyst noncomparability because of LIFO is probably less serious for earnings data than for balance sheets except as they are affected by the first point. He would find his work facilitated by disclosure of the effect of LIFO as compared with the more conventional usage upon cost of goods sold, taxes, and profits.<sup>9</sup> In the absence of such information, disclosure of the current replacement value of the inventories coupled with a knowledge of how cost of goods sold is related to inventories, as indicated above, would enable him to approximate the influence of the LIFO method upon results even though the estimate would necessarily be a rough one. This situation well illustrates how statements suitable for one purpose, in this case income tax purposes, may be distinctly less valuable for other purposes, such as credit or investment analysis. Such needs point strongly to the need for supplementary data or special statements that will meet the major purposes to be served.

<sup>7</sup> The effect is vividly illustrated in the annual report of Procter & Gamble Company for the fiscal year ended June 30, 1951. Its interim statement for the first nine months indicated that the adoption of LIFO had reduced profits as much as \$10,000,000. The severe decline in raw material prices during the final quarter of the year reduced this amount to \$2,900,000. The Company had previously employed a Reserve for Inventory Price Decline.

<sup>8</sup> The manner in which earnings comparisons among meat packers are made noncomparable is indicated in *Barron's*, January 30, 1950, p. 9. Examples of the partial use of LIFO may be had in the reports of American Brake Shoe and Foundry Corp., National Distillers Products Corp., United States Leather Co., and West Virginia Pulp and Paper Co.

<sup>9</sup> Thus, Wieboldt Stores, Inc. in its annual report for the fiscal year ended January 27, 1951, stated the effect of adoption of LIFO for a substantial portion of its inventory from the previously used retail inventory method upon initial and final inventory, income before taxes, Federal income taxes, and net profit. The change reduced net profit by \$165,680 to \$433,492.

**Gross profit margin and the expense ratio.** The excess of the selling price over the cost of the merchandise is the gross profit, and provides for the expenses of operation, income taxes, and the return to capital. The latter element is discussed below in connection with the operating ratio. The adequacy of this margin to cover these two elements may, on the one hand, be impaired because the business is hopeless, owing to uneconomic character (unskillful management, bad location, overexpansion, and so on) or temporary unfavorable conditions; or, on the other hand, it may be more than adequate because of extremely skillful management, unusually favorable external conditions, such as inflation, or a monopoly situation. In the ordinary situation, the expense element in the gross profit margin would be expected to be high or low as the amount of service rendered by the business was large or small in relation to selling price. Some of the chief factors influencing the relative importance of expenses, that is, the "normal" ratio of expenses to sales, are:

1. *The value of the unit sale.* If the individual sales are small, the relative cost of rendering the service is likely to be high. In this respect, wholesalers are expected to show lower expense ratios than retailers.
2. *The number of functions or services performed.* Some of the functions that differentiate businesses that are nominally similar are delivery service, credit, warehousing and storage, and packaging or processing.
3. *Small total volume in relation to necessary minimum expenses of operation.* Such a situation might ordinarily spell failure, but if located in an isolated or protected market where a necessary service is performed, it may well survive.

Temporary factors, such as price controls during a war, may affect the gross margin. Sometimes a price squeeze from controls may be counterbalanced by reducing selling costs growing out of stimulated demand relative to a restricted supply or reduced credit losses.

Consideration of variations in the gross profit margin and in the elements which create it is given below in connection with the operating ratio and the percentage income account.<sup>10</sup>

<sup>10</sup> For data on gross profit margins in various fields of retailing, see Walter L. Mitchell, Jr., *Standard Ratios for Retailing* (New York: Dun & Bradstreet, Inc., 1940).

**Operating ratio.** Although the ratio, or per cent, of cost of goods sold to sales is valuable, a published statement may show only the combined total cost of goods sold and operating expenses in one amount. The ratio of this total of operating expenses and cost to gross revenues or sales is called the *operating ratio*, thus:

$$\frac{\text{Operating Expenses} + \text{Cost of Goods Sold}}{\text{Sales}} = \text{Operating Ratio.}$$

$$\cdot \quad \frac{\$90,000}{\$100,000} = 90 \text{ per cent.}$$

This ratio subtracted from 100 per cent shows the net margin available for income taxes and return to capital. The tendency of this margin to widen or narrow from year to year will be studied. Merchants and manufacturers generally profit by a rising price level, because their stocks increase in value while waiting on the shelves to be sold. At least this is true when they are able to fix their selling prices in proportion to current replacement costs. (Actually, the process of price adjustment lags somewhat.) This gain is not a genuine economic profit when the result of general price inflation. The effect of LIFO is to reduce or eliminate gains and losses from inventory price changes. The public utilities, on the other hand, owing to their inelastic rate structure, find that expenses tend to rise and decline with greater rapidity than do revenues. In a period of slowly declining prices, there would be a tendency for the operating ratio of a trader to rise, while that of the utility would be likely to fall. However, the utility might find the savings in lowered costs overbalanced by loss of revenues, if the price level decline should be accompanied by a marked reduction in the volume of business.

Some like to study the operating ratio as a measure of operating efficiency even though the ratio is determined by external and uncontrollable conditions as well as by managerial skills. After examining the operating ratio, the analyst should give the greatest attention to those expenses that are most controllable and compare them with the similar performance of similar businesses. But even the items sometimes called "uncontrollable," such as property taxes and depreciation, can be influenced by management decisions. A manufacturer can influence property taxes by the choice of his plant location although he must weigh any tax reduction against possible increased costs, such as for transportation of products and quality of labor

supply. Similarly, an air transport company might have lower depreciation expense because of a skillful timing of aircraft purchases. On the other hand, low depreciation might result from a longer use of equipment than was economic because of the more efficient size or performance of later models. The aggregate operating ratio is thus more significant than the parts. One high expense may explain the lowness of another. Heavy advertising outlays may lower the ratio of other selling expenses to sales. Some expenses may point to possible future profits rather than current operations, as in the case of the new product research expenses of a chemical company or the drilling costs charged off by an oil company.

In a "normal" situation, the operating ratio should be low enough to leave a fraction of the sales dollar sufficient to give a fair return to the investors. In those business enterprises where the investment of funds is very small in relation to the sales volume, as in the personal services, such as the barber shop, the beauty parlor, the automobile repair shop, and the restaurant, a high operating ratio might still permit a high return on the small investment. In merchandising, where more capital is needed, the operating ratio would have to be lower, in manufacturing, it would have to be still lower; and in the public service industries and real estate, where the customer is primarily buying the services of capital, the operating ratio has to be relatively low if it is to provide an adequate return. The point is illustrated by the following figures, which show different amounts of investment needed to produce certain volumes of sales or gross revenues in four hypothetical situations. In each case, assuming a return of 8 per cent on the investment, a resultant operating ratio is given. For the sake of simplicity, income taxes, which are ordinarily omitted in the calculation of the operating ratio, must be assumed to be included among the operating items if the balance is to represent investment return as it does in this illustration.

	A	B	C	D
Sales	\$100,000	\$100,000	\$100,000	\$100,000
Investment needed	\$500,000	\$100,000	\$ 50,000	\$ 10,000
An 8% return would be	\$ 40,000	\$ 8,000	\$ 4,000	\$ 800
As a percentage of sales, this is	40%	8%	4%	0.8%
Operating ratio permitting this return	60%	92%	98%	99.2%

The foregoing illustrates how the operating ratio and the net operating income per cent are complementary, their sum being one hun-

dred per cent. The factors governing the amount of working capital in relation to the volume of business (described previously, p. 99) and those governing the requirement for fixed assets, measured by the usual plant turnover ratio, account for the reasonable differences in operating ratios among the various industrial groups. Within each classification, considerable allowance for variations must be made. Thus, a merchant owning his own store will need a lower operating ratio to allow a return upon his real estate investment. It should be lower because he will not pay the rent expense which will raise the operating ratio of his competitor who leases his store premises.

In manufacturing concerns, the greater the extent of mechanization, the larger will be the amount of investment in equipment, and so, the lower the plant turnover—that is, the relation of sales to gross plant investment. As labor costs are reduced, capital return should increase and the operating ratio decrease. In this respect, vertical integration, the linking together of concerns that form successive steps in production, results in the investment growing in relation to the sales. The net profit margin of the combination seems higher because it is related to the final sales of the last link in the chain, where before each unit had its own sales. If a motor company buys up a body works, its sales are not increased, but its profit must be greater if it is to earn a return on the increased assets in its balance sheet. The operating ratio should be lower. A horizontal combination, however, unites similar concerns, say a number of department stores. Both sales and assets increase, and the operating ratio may very well be close to the average for the combining concerns.

**Break-even points.** When concerns are comparable in the type of their operations, the operating ratio is a help in measuring probable resistance of earning power to the influence of depression. A low operating ratio, or its converse, a large margin of net income before income taxes, means greater ability to withstand declining business volume. Historical earnings analysis may indicate how far sales volume can decline before the point of zero return, or break-even point, will be reached. Changing conditions within the business, price level changes, and war make the problem difficult. Management sometimes supplies pertinent information in the annual report.<sup>11</sup>

<sup>11</sup> Statistical studies of some leading corporations to discover break-even points are found in Walter Kautens-Rauch, *The Economics of Business Enterprise* (New York: John Wiley & Sons, Inc., 1939). Practical operators are in-

**Percentage analysis of the Income account.** Such a study as the foregoing, of items in their relation to the sales, leads to the consideration of percentage analysis of the Income account. As with the balance sheet, this method has the advantages of: (1) showing changes in the proportions of the statement, which are usually as significant as changes in gross amounts but should be read with the latter; (2) reducing the figures to a size which can be more easily comprehended, and (3) throwing into relief tendencies not so readily apparent in the original figures.<sup>12</sup> The earnings statements for United Air Lines, Inc. for the years 1950 and 1951 are used here to illustrate how percentages may be added to aid the study of the dollar figures. (The original figures, as reported in the prospectus of March 19, 1952, also gave details on sources of revenues and certain explanatory footnotes useful to the reader.)

In strict logic, the percentage analysis should end with the operating section, for the remaining items—notably nonoperating income—bear no relation to sales. It is customary, however, to continue the percentages, as here, to the net amount transferred to surplus, because these percentages facilitate a comparison of the importance of the nonoperating items relative to the net operating income.

The increase in gross operating revenues amounted to 23 per cent. Study would indicate how much of this increase resulted from volume (traffic) increase and how much from price (rate) increases. Sales increases for industrials may be analyzed with the aid of price indexes where tonnage figures are lacking. The decline in the operating ratio from 87.9 to 85.5 per cent is almost wholly the result of the decrease in the per cent of depreciation to gross (10.3 to 8.1 per cent). Ordinarily growth in volume and more intensive use of facilities would improve other expense ratios as well. The greater part of the improvement in the net operating income before taxes, which rose from 12.1 to 14.5 per cent, was absorbed in the rise in Federal income taxes rates incident to the defense effort and the Korean war. The

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clined to regard break-even points as changing. The point is illustrated in an address by J. B. Herndon, Jr. before the New York Society of Security Analysts, Inc. on "The Hotel Industry and Hilton Hotels Corporation" (January 12, 1951).

<sup>12</sup> Line, bar, or pie charts are sometimes employed to visualize the proportions shown here by percentages. For analytical work, bar charts of the net income items and their distribution and line charts of major items such as sales, net operating income, and net for common stock are likely to be most useful. See Chapter XI.

## UNITED AIR LINES, INC.

## STATEMENTS OF EARNINGS

	Years Ended December 31			
	1950	1951	1950	1951
	Thousands of dollars		Percentages	
<b>OPERATING REVENUES</b>	104 095	127 798	100 0	100 0
<b>OPERATING EXPENSES AND TAXES EXCLUSIVE OF INCOME TAXES</b>				
Flying ground and passenger operations	46 053	56 792	44 2	44 5
Traffic sales advertising and publicity	11 265	13 690	10 8	10 7
General and administrative	8 101	9 678	7 8	7 6
Uncollectible accounts	60	27	1	—
Maintenance	14 929	18 278	14 3	14 3
Depreciation	10 658	10 406	10 3	8 1
Amortization of development costs	400	400	4	3
Total operating expenses and taxes (exclusive of income taxes)	<u>91 466</u>	<u>109 271</u>	<u>87 9</u>	<u>85 5</u>
<b>NET EARNINGS FROM OPERATIONS BEFORE INCOME TAXES</b>	<u>12 629</u>	<u>18 527</u>	<u>12 1</u>	<u>14 5</u>
<b>OTHER DEDUCTIONS (OR INCOME) net</b>				
Interest on long-term debt	768	717	7	6
Provision for losses of Mexican subsidiary—not consolidated	240	130	2	1
Amortization of intangible asset	443	443	4	3
Net loss (or gain) on disposition of property	575	18	7	—
Other net	50	214	—	2
Total other deductions net	<u>803</u>	<u>1 058</u>	<u>8</u>	<u>8</u>
<b>NET EARNINGS BEFORE INCOME TAXES</b>	<u>11 826</u>	<u>17 468</u>	<u>11 3</u>	<u>13 7</u>
<b>PROVISIONS FOR TAXES ON INCOME</b>				
Federal income taxes	5 183	8 672	5 0	6 8
Federal excess profits tax	—	—	—	—
State income taxes	214	234	2	2
Total provisions for taxes on income	<u>5 397</u>	<u>8 906</u>	<u>5 2</u>	<u>7 0</u>
<b>NET EARNINGS</b>	<u>6 430</u>	<u>8,563</u>	<u>6 1</u>	<u>6 7</u>

## UNITED AIR LINES, INC.

## EARNED SURPLUS

	1950	1951
BALANCE AT BEGINNING OF PERIOD	3,611	7,398
NET EARNINGS FOR PERIOD	6,430	8,563
	<u>10,041</u>	<u>15,961</u>
ADD: Original reserve for self-insured crash losses restored to earned surplus	—	600
	<u>10,041</u>	<u>16,561</u>
DEDUCT:		
Cash dividends:		
Preferred stock	419	388
Common stock	1,552	3,300
	<u>672</u>	<u>—</u>
Transfer to capital surplus—primarily preferred dividends charged to that account in prior years	2,643	3,688
	<u>2,643</u>	<u>3,688</u>
BALANCE AT END OF PERIOD	<u>7,398</u>	<u>12,872</u>

Company draws attention to the fact that it was not subject to the excess profits tax. Income taxes rose enough so that the Federal government in 1951 was collecting more than the amount earned for all of the stockholders combined. The only favorable aspect of the heavy income tax burden upon industry is that in the event of a later recession the first loss of earnings falls chiefly upon any portion of income in the "excess profits" bracket and so is borne chiefly by the Federal treasury rather than by the corporation. Any further shrinkage is shared in a substantial way by the income tax collector. In this case, total income taxes were equivalent to \$2.61 and \$3.89 per share of common stock in 1950 and 1951, respectively, as compared with earnings of \$2.90 and \$3.58 and dividends of \$.75 and \$1.50 in the same years.

**Retail store percentage data.** Although percentage analysis of condensed income statements is valuable, increasing interest is found in more detailed figures, especially in retail lines where large numbers of fairly comparable concerns are to be found. An early study of this type was a survey in the clothing industry made by the Bureau of Business Research at Northwestern University. This study covered costs, merchandising practices, advertising, and sales in the retail distribution of clothing, and compared such items as rents,

wages, and salaries with net sales.<sup>13</sup> More extensive studies of operating expenses of both wholesale and retail trade are those of the Bureau of Business Research at the Harvard University Graduate School of Business Administration. These bulletins have covered a number of lines of business, including department stores, grocery stores, wholesale groceries, shoe stores, jewelry, hardware, and variety chains. Such studies should be used with care. They may represent common practice and yet be far from ideal practice. Or, they may concentrate upon concerns that represent a composite of varying conditions in such matters as size, credit policy, and location.<sup>14</sup>

Some of the chief items for leading retail lines have been compiled from surveys made and published by Dun & Bradstreet, Inc., and are presented in the table on the next page.<sup>15</sup> They show characteristic differences that merit careful study.

The table clearly shows proportions that might be expected on the basis of general principles. The rapid turnover of standardized goods in such a line as groceries makes it possible to operate on a narrower margin of gross and net profit than for the opposite type of business, such as that of the retail jeweler. The meat markets were an exceptional group with the very high inventory turnover of almost once per week (48.8 times) and in their small net operating margin before income taxes (1.8 per cent). Some allowance should

<sup>13</sup> The material appeared in a number of bulletins published by the Bureau between 1921 and 1925. Leading results appeared in the Bureau's *Selling Expenses and Their Control* (New York: Prentice-Hall, Inc., 1922).

<sup>14</sup> For a discussion illustrating the effect of these variables, see N. H. Engle, "The Marketing Structure in the Grocery Industry," *Harvard Business Review*, April, 1934, p. 328.

<sup>15</sup> Data for 1939 are from Walter L. Mitchell, Jr., *Standard Ratios for Retailing* (New York: Dun & Bradstreet, Inc., 1940). For valuable discussion, see pages vii-xx. This book represented the fifth Dun & Bradstreet Survey of Retailers' Operating Costs and summarized the experience of some 13,000 United States retailers for the year 1939. Data for 1949 and 1950 are from surveys by Robert K. Tebeau. These latter "Cost of Doing Business" studies also included stores retailing auto accessories, women's accessories and specialties, cameras and photographic supplies, children's wear, and package liquor. Copies of these and later surveys are to be had on request from the Business Library, Dun & Bradstreet, Inc., 290 Broadway, New York 8, N.Y. Other data may be had from *Departmental Merchandising and Operating Results of Department Stores and Specialty Stores*, published annually by the Controllers' Congress of the National Retail Dry Goods Association, New York, and M. P. McNair, S. F. Teele, and F. G. Mulhearn, *Distribution Costs—An International Digest* (Boston: Harvard University, 1941).

be made for the less favorable economic conditions in 1939 than in 1949, a difference that is reflected in the virtual absence of bad debt losses in the later year. Yet the dry goods field—the only one for which figures were available for both years—showed a decrease in the typical net margin from 3.0 to 2.8 per cent in spite of the elimination of bad debt loss expense of 0.5 per cent. Net margin declined moderately from 3.0 to 2.8 per cent. It is interesting to note the economic similarity of the dry goods and hardware businesses. The figures for the shoe trade were not greatly different. The drug-stores with a turnover distinctly higher than that for hardware (3.1 vs. 2.0) nevertheless showed almost identical gross (30.5 vs. 29.1) and net margin (2.4 vs. 2.4).

#### TYPICAL OPERATING AND MERCHANDISING RATIOS

	<i>Meat Grocer</i>	<i>Dry Good</i>	<i>Dr. St.</i>	<i>Dr. /ca</i>	<i>Hdw ca</i>	<i>Fe hu</i>	
<i>*Mar. 1st * Survey Year</i>	1949	1950	1949	1939	1949	1939	1939
(Percentages based on Net Sales)							
Net Sales	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Cost of Goods Sold	82.3	83.7	72.5	66.4	69.5	70.9	51.1
Gross Margin	17.7	16.3	27.5	33.6	20.5	29.1	18.9
Total Expenses	15.9	14.3	24.7	30.7	28.1	26.7	43.6
Owners' Salaries	5.2	3.7	5.2	10.4	9.6	8.9	17.0
Employees Wages	5.2	5.4	7.2	7.2	7.5	7.6	10.4
Occupancy Expense	2.0	1.9	3.4	5.5	4.8	4.0	6.4
Advertising	0.2	0.1	0.5	2.1	0.9	0.9	2.1
Bad Debt Losses	0.0	—	0.0	0.4	0.3	0.6	1.0
All Other Expense	3.3	2.9	5.1	5.1	4.7	4.7	6.7
Net before Federal Income Taxes	1.8	2.0	2.8	2.9	2.1	2.1	5.3
Inventory Turn- over (times per year)	48.8	17.2	2.5	1.8	3.1	2.0	1.1

\* Fresh meats and poultry at least 50 per cent of sales  
† 20% to 50% of sales on credit

The original material in the foregoing study was classified to show differences between profitable and unprofitable, cash and credit, large and small sales volume, and location in large and small cities.

or in different parts of the country, where the number of units warranted such treatment. Such background information is invaluable in bank and mercantile credit analysis and should be helpful to those engaged in the field of retail store management.

Illustrative of the kind of differences which might be expected among concerns within an industry with different modes of operation, are those shown in the following table. These profit and loss ratios are a breakdown of the data for all grocery and meat stores shown in the preceding table. They offer a comparison of self-service stores and those served by clerks from the counter, of cash and credit-granting stores, and of the smaller stores with sales under \$100,000 per year with larger stores having sales from \$200,000 to \$500,000. The original study reported the ratios of stores grouped on the basis of the population in the city served, of stores grouped by form of organization (proprietorship or partnership), and stores that do and do not offer delivery service.

In the comparison of self-service stores with counter-service stores, it is interesting to note how close the gross margins (16.0 and 16.5 per cent, respectively) and the total expense ratios (14.5 and 14.4 per cent, respectively) are. Apparently any higher prices charged by the latter are as much the result of higher merchandise costs as of higher expenses in view of the surprisingly similar expense ratios. The self-service stores were somewhat larger on the average (\$152,800 sales) than the counter-service stores (\$107,800). Size will have an independent effect on ratio. Because the proprietor of a small store performs more of the work, his compensation relative to that of employees will tend to be a higher per cent of sales. Worth noting is the higher occupancy cost and the higher advertising expenditures of the primarily self-service stores. The fact that the net income of the latter is but 1.5 per cent of sales as against 2.1 per cent for the counter-service units at a time when they are able to show a higher return on net worth (13.6 vs. 10.8 per cent) suggests a smaller investment by the self-service stores in receivables and store real estate. Their relatively low stock turn may be explained by the self-service stores handling a larger proportion of grocery items relative to meat and produce. The latter turn faster than the groceries.

The similarities of the cash and credit stores is also more striking

than their differences Gross margins differ by only one tenth of a percentage point (16.4 and 16.3 per cent, respectively), total expense ratios by a half of one percentage point (14.1 and 14.6 per cent, respectively). The result is a squeeze of the profit margin for the credit stores so that their net before income taxes was lower than for cash stores (1.7 and 2.3 per cent, respectively) and net profit on net worth was but one half as much for the credit as the cash stores (8.0 and 16.9 per cent, respectively). In an earlier study (1939), this comparison showed credit stores enjoying somewhat larger gross and net margins A somewhat larger gross margin would seem 'normal' to allow for credit-granting expenses and bad debt losses a somewhat larger net margin would seem necessary to provide a return upon the extra funds tied up in accounts receivable A further influence on these ratios beyond the difference in credit policy is that of size The average cash store had sales of \$148,400 as compared with \$114,600 for the average credit store

COMPARATIVE RATIOS OF GROCERY STORES UNDER  
DIFFERENT CONDITIONS 1950

	Primarily Self- Service	Primarily Counter Service	Credit Sales Under % of Sales	Sales Under % of Sales	Sales Volume in 1950	
					\$100,000	\$200,000
Net Sales	100.0	100.0	100.0	100.0	100.0	100.0
Cost of Goods Sold	84.0	83.5	83.6	83.7	84.2	83.6
Gross Margin	16.0	16.5	16.4	16.3	15.8	16.4
Total Expenses	14.5	14.4	14.1	14.6	13.6	14.3
Owners Compensation	3.1	4.5	4.0	3.6	5.3	2.4
Employees Wages	5.4	5.0	5.0	5.9	3.4	6.7
Occupancy Expense	2.2	1.9	1.9	1.8	2.2	1.7
Advertising	0.6	0.2	0.5	0.3	0.2	0.6
Delivery Expense	0.3	0.6	0.1	0.6	0.3	0.3
Depreciation, Fix- tures	0.8	0.6	0.7	0.5	0.6	0.6
All Other Expense	2.1	1.6	1.9	1.9	1.6	2.0
Net before Federal Income Taxes	1.5	2.1	2.3	1.7	2.2	2.1
Net Profit on Net Worth (%)	13.6	10.8	16.9	8.0	8.2	16.2
Inventory Turnover (times per year)	15.9	17.6	17.7	16.9	15.1	18.1

Surprisingly enough, the typical net sales per concern were substantially alike in cities under 50,000 and over 500,000 (\$128,300 and \$127,800, respectively). The stores in the larger cities were able to obtain a larger gross margin (17.6 as compared with 15.5 per cent). Of this 2.1 percentage points of differential 0.8 points went to higher owners' compensation and 0.5 points to a higher net before income taxes. Surveys in other retail lines have shown the tendency shown here for grocery and meat stores that in going from small towns to larger cities, occupancy expense tends to increase and advertising expense to decrease.

**Critical study of operating expenses.** The operating section is the heart of the income statement, and its accuracy is a matter of prime importance. What are the defects which are likely to make it misleading? Some, particularly in the case of small businesses, may arise from poor bookkeeping. Thus, the omission of accrued expenses, discussed earlier (Chapter III), would result in an overstatement of earnings. The effects of inadequate valuation reserves or understated liabilities have been pointed out and common methods of detection suggested. In audited statements, common for larger concerns, such practices are relatively unlikely and the reader has to be alert for evidences of ultraconservatism and the understatement of earnings and net worth.

Ideas for a critical study of the operating section have already been given in various places as for the analysis of receivables and inventories in the working capital section. In addition, certain items receive sufficient attention to warrant their special mention at this point. These are maintenance, depreciation, income tax liability, and liability for past service pensions. In a different category but also appropriate for discussion here is the influence of price level changes upon the interpretation of operating earnings.

1. *Maintenance.* Like the inventories and receivables, plant and equipment are major assets. Any error in their valuation therefore is likely to mean an important error in reported earnings. A loss of one per cent of the assets would equal a one-sixth, or 17 per cent, change in the profits of a business reporting 6 per cent earned on total assets. If the fixed assets are not kept in repair, their value may decline with no reflection in the balance sheet valuation of the asset. Yet the relevant maintenance, or repair expenses, are often

buried in the total operating expenses, except for the public service corporations, the forms of whose reports are regulated. Similarly, such information is required of corporations filing statements with the Securities and Exchange Commission.

In years of poor earnings, many companies neglect the care of the fixed property, and in good years may, or may not, treat the property in the opposite manner. Outlays for current maintenance expense are generally spoken of as *repairs, renewals, or replacements*. These are to be distinguished from expenditures for *additions and betterments*, which constitute increases in the investment in fixed assets.

**2 Depreciation** Closely related to maintenance is the expense of depreciation allowances because the life of an asset which determines how rapidly it shall be depreciated is affected by the amount of repair work or maintenance given the asset.<sup>16</sup> Furthermore, what one concern might charge to repairs, another might regard as a replacement of a part likely to prolong the life of the asset and so a charge against the reserve account accumulated by prior depreciation allowances. Where it is possible, maintenance and depreciation should be considered in combination instead of considering depreciation alone. Such difficulties in judging depreciation standards explain the caution given by the Bureau of Internal Revenue in suggesting depreciation rates.<sup>17</sup> It stated that such rates as those set forth below are to be used "solely" as a guide or starting point from which correct rates may be determined in the light of the experience of the property under consideration." The rates are said to include an allowance for "normal obsolescence."

Some companies report the depreciation rates they employ for important classes of their property. The analyst is compelled, for

<sup>16</sup> In the accounts prescribed for steam railroads by the Interstate Commerce Commission, depreciation is actually made a subdivision under maintenance. See Chapter XII, "Railroad Statements."

<sup>17</sup> From *Depreciation Studies*, a preliminary report of the Bureau of Internal Revenue, January, 1931 and *Bulletin F* (revised, January, 1942) on "Income Tax Depreciation and Obsolescence." The latter bulletin contains rates for a wide variety of equipment used in many different lines of business. Material of this type and extensive tables of depreciation rates, compiled from various decisions and from books and articles written by acknowledged authorities are to be found in the *Prentice-Hall Federal Tax Service*. For a full discussion of accounting for depreciation, see E. L. Grant and P. T. Norton, Jr., *Depreciation* (New York: Ronald Press Co., 1949).

the most part, to compare the total depreciation allowance in the income statement with the gross amount of property shown in the balance sheet and note variations between similar companies. The following average composite rates are for a relatively small sample of leading corporations.<sup>18</sup> Differences from such average industry rates are studied to detect any influence they may have had on the reported earnings of individual companies. Companies, such as those engaged in mining, for which depletion is important, are not included because the life of a mineral deposit is the result of the character of the individual mine.<sup>19</sup>

<i>Buildings</i>	<i>Probable Useful Life (Years)</i>	<i>Depreciation Rate ('%)</i>
Factories, Hotels	50	2
Office Buildings, Stores	67	1½
Warehouses	75	1¾
<i>Building Equipment</i>		
Boilers and Furnaces	20	5
Passenger Elevators	20	5
Plumbing Fixtures	25	4
<i>Office and Other Equipment</i>		
Adding and Similar Machines	10	10
Office Cabinets and Desks	15	6½
Typewriters	5	20
Automobiles	5	20

The rates for buildings are exclusive of building equipment. Composite rates which include the latter are also reported.

Differences between companies may be due to differences (a) in depreciation rates, (b) in policy as to maintenance, some making more generous repairs and allowing less for depreciation, or (c) in composition of assets. Differences in depreciation rates used by different companies, if material, should be reflected over a period of years in the over-all average rate on gross plant, such as is shown in the accompanying table. Because the proper allowance for depreciation is a matter of judgment rather than an absolute fact, relative differences from the common practice are chiefly significant. Variations are studied for their effect on reported earnings. One concern may own considerable real estate. Land being nondepreciable and

<sup>18</sup> Medians, rather than arithmetic means, were used, to avoid undue influence from extreme cases.

<sup>19</sup> Treated below in Chapter XVI, "Mining Statements."

buildings but slowly depreciating, the composite rate for such a concern would be low as compared with that of one renting its premises and so with its fixed assets mostly shortlived store fixtures. Occasionally concerns find that some of their fixed assets have accumulated a 100 per cent reserve and so require no further allowance. Succeeding years will show a reduction of depreciation expense until such assets are replaced by new units.

#### COMPOSITE DEPRECIATION RATES IN VARIOUS FIELDS

(Per Cent of Depreciation Allowance to Gross Plant and Equipment,  
Including Land--Medians)

	1940	1942	1944	1945	1946	1947	1948	1949	1950
Auto parts . . .	5.4	7.5	8.6	10.4	3.3	4.2	4.6	5.7	5.5
Baking and milling .	4.1	4.4	3.7	3.6	3.6	3.4	3.4	4.0	4.2
Chemicals .	5.0	5.6	6.2	6.3	4.1	4.1	4.6	4.7	4.7
Meat packing .	3.2	3.4	3.4	3.4	3.2	3.5	3.8	4.0	4.0
Paper and paper products .	4.3	4.7	4.8	4.3	3.8	3.6	3.8	4.2	4.4
Tires and rubber .	4.9	5.6	5.8	17.6	4.3	4.8	5.4	5.8	5.4
Steam electric companies	2.4	2.6	2.7	2.5	2.5	2.4	2.4	2.3	2.1

Such a situation is found in depression years when old assets, such as machines or delivery trucks, are not replaced because of weak finances or low utilization of facilities.<sup>20</sup> Rapid amortization (or write-off) of war-time facilities steps up the over-all rate, as seen in the case of the auto parts and rubber industries between 1940 and 1945. (Unamortized balances of "war facilities" were wholly written off in 1945.) Then as long as these assets are continued in the gross plant account they have a 100 per cent "reserve" and require no further depreciation. The average rate falls, then it rises slowly, as it did after 1945, when new property requiring depreciation is added. A similar accelerated depreciation policy was allowed for income tax purposes after Korea.<sup>21</sup>

Occasionally, variations in the depreciation rates will result from using rates that vary with the rate of operations, instead of relying solely upon the more usual straight-line rates. The steel industry appears to have been the most prominent user of this method after

<sup>20</sup> The 1933 annual report of the Continental Baking Corporation stated: "The reduction in depreciation as compared with previous year is due to Assets which have become fully depreciated and not to any change in depreciation policy."

<sup>21</sup> The balance sheet effects of such amortization can be seen in the figures for Commercial Solvents Corporation on page 134, as well as that Company's unusual writedown of plant to \$1 in 1930.

1945.<sup>22</sup> Some others, like American Viscose Corporation, Endicott-Johnson Corporation and Westinghouse Electric Corporation also use this method.

Differences in depreciation policy are ordinarily thought of as most serious for their effect upon reported earnings rather than upon the balance sheet. Yet continued high depreciation may by reducing the book investment expose the corporation to taxes on excess profits at some later time, partly, because it leaves less assets to be depreciated and partly because it reduces the apparent invested capital upon which "normal" earnings are allowed.<sup>23</sup> Ultraconservative reporting of assets values may also lay the concern open to charges of "profiteering"; that is, earning an excessive rate of return on invested capital as shown in the balance sheet. Those who favor ultraconservatism argue that their policy (a) protects against unforeseen obsolescence, (b) counterbalances the tendency of repairs to increase as the asset ages, and (c) burdens more heavily the earlier years, which are the most certain to benefit from asset purchases.

In conclusion, the subject of depreciation and maintenance practice should be given its proper perspective by noting when it is important and when unimportant. The influencing factors are:

(a) *The relative importance of the depreciable assets to the total investment.* When the fixed assets are a large fraction of the total assets, as they are in the public service corporations, depreciation will be more important than when they are small, as is usually true of mercantile and financial concerns.

(b) *The relative importance of the depreciation expense as compared with the gross revenues.* This factor will flow partly from the

<sup>22</sup> In the inflation years after 1945 United States Steel Corporation used replacement value depreciation (1947). When this practice was frowned upon by the SEC and accountants because it was not based on cost, it turned to accelerated depreciation based on cost. In its 1951 annual report, the Corporation states (p. 33) that (1) this depreciation is taken on postwar facilities in the first years of their life, when economic usefulness is greatest, (2) is related to the excess of the current operating rate over the long-term peacetime average rate of 70 per cent of capacity, none being taken when operations fall to that level, and (3) is in addition to normal depreciation. An account is given by S. Y. McMullen, "Depreciation and High Costs," *Journal of Accountancy*, October 1949, pp. 302-310.

<sup>23</sup> When the corporation reports depreciation for income tax purposes at more or less than the figure reported in its annual reports, the balance of fixed assets remaining for future depreciation and the invested capital for excess profits purposes may differ materially from the reported amounts.

preceding point, but will also be affected by whether plant turnover is high or low and whether depreciation and maintenance is a high or low per cent of the asset.

(e) *Rate of return earned on investment.* If earnings are equal to 18 per cent on the total investment, it is clear that an error in depreciation equal to 1 per cent of investment would be only one third as important as it would if earnings were but 6 per cent on investment.

(d) *Relation of total debt to net worth.* When a heavy debt exists, with a consequently larger share of earnings expended for interest, the margin for the owners is thinned out. As a result, any change in earnings, such as a correction in the depreciation or maintenance charges, would produce a more extreme percentage change in the net profit than if interest were absent and the total net income were all net profit.

The question, in the last analysis, is one of how important a variation in depreciation policy will be in relation to the profit of the common stockholder.<sup>24</sup> Some calculate the amount of depreciation and depletion per share of common stock to facilitate a quicker study of its relative importance to reported earnings.

3. *Income taxes.* The income tax has come to have huge importance in recent years. Weak corporations may underestimate their liability or fail to report clearly amounts which may be in dispute with the Government. Earnings statements are examined for any material discrepancies between taxes as reported and as they would be expected to be on the basis of reported income. Statements are also studied over the past to note any assessments for tax deficiencies or refunds for excess payments as they affect the interpretation of year-to-year earnings. Footnotes that indicate the Internal Revenue Bureau has reviewed the company's returns for past years and reached an agreement are useful in ending one of the elements of uncertainty in both balance sheet and earnings statement.

4. *Pension costs.* The rapid increase in pension plans for employees in the 1940's to supplement the limited benefits of the Federal Old

<sup>24</sup> Laurence Sloan, *Corporation Profits* (New York: Harper and Brothers, 1929), p. 55. Sloan found the relation of depreciation and depletion to net profit for a group of 61 extractive companies to be 32.2% in 1926, 42.8% in 1927; for 158 nonextractive industrial companies, 18.7% in 1926, 23.2% in 1927. In this pre-SEC period, only 219, or two out of five, out of 545 companies studied, revealed the sums charged to depreciation and depletion.

Age and Survivors Insurance has made their study desirable. An unfunded plan, under which the employer merely pays retired employees pensions in cash as they become due, can represent a substantial capital liability. Probably most present plans of major concerns are based instead upon payments during the period of employment to an insurance company or into a trustee-administered pension fund. The pension cost is thus borne during the years in which the employee is rendering service rather than after retirement. When a plan is set up, the accumulated liability for past services for which no contribution has been made constitute a liability to be liquidated by subsequent payments. Even though the liability is not shown in the balance sheet, its amount as computed by actuaries and the probable annual costs incident to its liquidation should appear in annual reports and prospectuses.

The common practice appears to be to report not only the current contribution but also the payments for past services among the operating expenses.<sup>25</sup> Separate reporting of the latter enables the reader to see its relative importance to earnings, and supplementary information should indicate the number of years it will burden expenses. Permission to deduct payments into a fund for past service benefits up to 10 per cent of the accumulated liability in computing net income subject to Federal income taxes has led many companies subject to excess profits taxes after 1950 to fund this liability.<sup>26</sup> The analyst should not only relate the burden of such payments to current earnings and taxes but also to probable future earnings that might be lower. The estimate of accrued liability may be compared with the common stock equity even though the plan may be terminable so that the corporation has a legal basis for the customary omission of the item from the balance sheet.

5. *Price level changes and earnings interpretation.* During the 1940's when reported earnings contained important inflation elements,

<sup>25</sup> The alternative of charging surplus as a charge for *past services* is discussed in American Institute of Accountants Research Bulletin No 36, *Accounting for Annuity Costs Based on Past Services* (1948). Data on practice may be found in Warde B Ogden, "Survey of 260 Pension Plans Reveals Wide Variety of Accounting for Costs, Plus Some Hazards," *Journal of Accountancy*, January, 1952, pp. 44-47, and B. B. Greidinger, *Preparation and Certification of Financial Statements* (New York: Ronald Press Co., 1950), pp. 133-137, 269-272.

<sup>26</sup> General Cable Corporation made full payment in 1949 but set up the expenditure as a deferred charge to be charged against income over a 10-year period as it became deductible for tax purposes.

increasing attention was given to possible supplementary statements that would delete that influence.<sup>27</sup> Commonly suggested was the elimination of inventory appreciation and inadequate depreciation allowances, the latter because of the cost basis for plant rather than current replacement value. Such adjustments can only be made accurately by the business itself, which possesses the necessary details on costs, acquisition dates, and current values of specific assets. Approximate estimates are sometimes made without such information. Thus, the percentage of price rise during the year is applied to the initial inventory to measure the amount which would have to be earned and retained merely to maintain an inventory of the real value or purchasing power equal to the initial sum. Inventories kept on a LIFO basis would not require such an adjustment. If the gross replacement value of the plant and equipment is known, or can be reasonably estimated, the over-all depreciation rate can be applied to it to obtain the depreciation in current dollars.<sup>28</sup> This amount reflects what the business would need to recover in its costs to equal the fixed assets being used up at current values. During a given year,

<sup>27</sup> The greater violence of inflationary forces in Europe, notably Germany, has resulted in wider recognition of the inflation factor in accounting practices, even for income tax purposes. The differences are illustrated for Sweden by Per V A Hanner of the Handelshögskolan, Stockholm, in "Accounting and Taxation in Sweden in Relation to the Problem of Inflationary Profits," *Accounting Research*, January, 1950, pp 257-265. Depreciation on replacement cost is reported as accepted for cost accounting purposes, providing a parallel to LIFO for inventories. Yet Swedish price indexes reflected less inflation for the period 1939-1948 than the United States, although the price level rose more violently in the former country in the first three years of that period.

<sup>28</sup> Thus, Caterpillar Tractor Company estimated (1948) that if depreciation had been based on replacement rather than original cost, it would have been increased about \$1,500,000 over the \$3,777,800 reported, and net after income tax reduced about \$930,000. If the problem is to measure real or economic profits, an index of general purchasing power would be applied to initial inventory or to the original cost of the fixed assets. Inventory appreciation in a year when the general price level is constant would constitute a real profit when realized. In this respect LIFO, by using most recent purchase cost and so helping the business to realize the need for a selling price that will permit inventory replacement without financing, meets a practical problem rather than providing economic analysis. The use of replacement cost rather than purchasing power equal to original cost for calculating the adjusted depreciation base is a similar type of solution. Such a solution is probably more useful as a basis for managerial decisions than a pure purchasing power analysis because competition is typically in terms of current or replacement costs. This managerial problem is discussed in "Measurement of Profits for Executive Decisions" by Joel Dean, *Accounting Review*, April, 1951, pp. 185-196.

the inventory inflation plus the inadequate depreciation allowances are used to measure the amount by which reported earnings overstate real earnings.<sup>29</sup> Unfortunately, income taxes are based upon reported rather than real, or economic, earnings. When these two inflation elements in reported earnings are compared with the amount shown as retained earnings, the latter will often be found to be insufficient to maintain the integrity of the stockholders' investment during years of inflation. Some businesses have been obliged to borrow in such years to make up the deficiency.

Where the price level change is sufficient to make adjusted earnings of interest, management might well assemble and make available such figures in addition to the conventional statement. They could have value to common stockholders analyzing their economic position and the extent to which results are due to passing inflation or deflation, as well as for management in wage negotiations, in public relations to deal with charges of "profiteering," and for other managerial decisions having to do with pricing, expansion, and profit-sharing.<sup>30</sup>

This chapter was devoted primarily to the operating section; the next considers the remainder of the income statement.

<sup>29</sup> An estimate by the Machinery and Allied Products Institute (Chicago) of the inflation influence on reported corporation profits is as follows:

(Billions of Dollars)

	1946	1947	1948	1949	1950
As reported	13.9	18.5	20.9	17.0	21.9
As corrected	7.4	10.7	16.1	16.7	14.1
Differences	6.5	7.8	4.8	0.3	7.8

The U. S. Department of Commerce publishes estimates of the contribution made by inventory gains or losses to earnings before taxes.

<sup>30</sup> The argument for supplementary financial statements in current dollars is elaborated by James A. Lanham in a note in the *Journal of Accountancy*, June, 1950, p. 519. An example of the significance of such data in wage disputes is found in the Testimony of W. A. Paton and H. Tippit before the Presidential Steel Board, summarized in the *Journal of Accountancy*, October, 1949, pp. 344-350. The problems and a methodology for such statements are found in R. D. Kennedy and S. Y. McMullen, *Financial Statements* (Homewood, Ill.: Richard D. Irwin, Inc., rev. ed., 1952), Chapters 16-20. A careful examination of the illustrative case in Chapter 20 will point up the problems arising in such matters as the selection of suitable deflationary price indexes and the assumptions that an outside analyst is obliged to make in matters such as the acquisition dates of assets. The latter problem would not arise where the company's own accountants with access to the records were making the analysis. Also see W. A. Paton, "Measuring Profits under Inflation Conditions," *Journal of Accountancy*, January, 1950, p. 12.

## CHAPTER X

### Analysis of the Income Statement (Continued)

**"Nonoperating" or "other" income.** Nonoperating income is nominal or unimportant for most businesses, but for some, especially certain large, corporations it is of considerable significance.<sup>1</sup> Just as nonoperating assets are studied for differences between balance sheet and current value and for their contribution to solvency, their income is studied to discover any income potential not appearing as reported earnings. Most often such assets are investments, the dividend income from which may only reflect their earnings in part.

Investments may ordinarily be grouped under three chief heads

1. Credit obligations with a fixed income claim
2. Ownership obligations of a marketable nature, with a more or less variable income return
3. Other property or securities, which may represent an interest in related businesses that are not likely to be sold and which may contribute to earnings indirectly, as by supplying essential raw materials or affording market outlets

In the first class would fall United States, municipal, and other bonds that are held as either temporary or permanent investments. Such holdings will afford a source of income of a constant, though

<sup>1</sup> A different use of "nonoperating" is the "irregular and unpredictable more or less fortuitous and incidental" given in the American Institute of Accountants Research Bulletin No. 32, p. 260. In financial circles, it is more usual to refer to these items as "extraordinary gain or loss." Such usage is confusing and in the opinion of this author undesirable because many irregular items are closely connected with operations. The allied tendency of grouping nonoperating income, such as dividends, with the sales at the beginning of the income statement before deducting any of the expenses provides a mixed base of gross and net items not properly comparable to the operating expenses, as in a percentage analysis.

usually not a very substantial nature. Nonfinancial corporations do not, as a rule, find it advantageous to use their funds in this direction, because of the comparatively low return on such investments. Consequently, the presence of an investment in another corporation's bonds is likely to indicate some interest in that corporation's well-being. A company might take this means of financing an affiliated enterprise because it could borrow the capital on its own credit more advantageously than could the minor corporation.

Where the investment falls in the second class, the income may still represent a fairly constant and possibly important source of revenue. This has been, and still is, the case with many of the larger railroad corporations which own many parts of their system not by direct title to the physical properties but by stock ownership. Where the corporation under study is able to control the corporation in whose stock it has invested, the dividend policy may be varied to meet the needs of the parent company. There have been cases where the earnings have been retained in the subsidiary company until the owning company suffered a period of low earnings, when dividend declarations were made so that the increased income from investments would somewhat offset the smaller operating profits.

More and more common is the practice of reporting in supplementary footnotes to the statements the amount of any earnings of such related companies not received as dividends.<sup>2</sup> Earnings power that otherwise might be hidden is thus revealed to the careful reader. Because such undistributed earnings do not appear in the income statement or reported earnings per share, they are sometimes referred to as "hidden."<sup>3</sup> Or, if securities are of companies for which independent information is available, disclosure may take the form of indicating the amount and nature of such holdings. Similarly, information may be given as to changes in the book value of common stock equities or changes in their market value.

Sometimes substantial income may be derived from sources that

<sup>2</sup> Thus, Texas Company reported (1951) that estimated net earnings of non-subsidiary companies exceeded dividends received by approximately \$50,000,000. It notes, however, that distribution would have been subject to certain foreign and U. S. Federal income taxes as well as exchange difficulties.

<sup>3</sup> Exceptional is Robert Gair Company, Inc., which reports earnings in the usual manner and also including its equity (60%) in the undistributed net income of Southern Paperboard Corporation. In 1950, these two figures per share of common were \$2.67 and \$3.37, respectively.

are represented by small, or no, value in the asset column. Royalties, such as Cluett, Peabody and Company, Inc. has derived from its Sanforizing patents, would be an example. The problem in such cases is to estimate the probable future of such income, which may be limited as by the life of the patents.

The sum of the "other income" and the net operating income, sometimes labeled "Gross Income" or "Total Income," is the amount available for the usual nonoperating deductions. The nature of these nonoperating expenses was discussed in Chapter III. on profit and loss statement construction. For the average reader, two items in this class are of major importance at the present time—taxes on income and "fixed charges," which has come to mean the fixed return for the use of borrowed funds and sometimes rentals under long-term leases.

**Interest charges.** Because the interest charges are a financial expense the amount and even the existence of which depends upon the form of financing, they are generally excluded from the operating section and the operating ratio in analytical work. A business paying interest ordinarily gets its funds at a lower cost to its owners than if it had employed preferred or common stock, but it assumes the risk of insolvency. In financial circles, interest charges and fixed charges are practically synonymous. The chief exception is the railroad, with its other fixed charges chiefly rentals for the use of other roads and joint facilities. These rents are for the use of capital, and are consequently grouped with interest, as fixed charges. With the growing interest in the sale and leaseback of real estate, it becomes increasingly important that rents be included among the fixed charges whenever they are payable under leases that run for a number of years.\*

In studying the margin of income available for the interest charges, it is usual to state how many times these charges have been earned. The following figures may be used to illustrate the method:

Income after deduction of all operating expenses and taxes	\$500,000
Bond Interest	<u>200,000</u>
Balance	<u>\$300,000</u>

\* The Securities and Exchange Commission in Regulation S-X, Rule 12-16, Note 5, requires disclosure of any rentals under leases running for more than three years and their minimum annual amount if they are conditional whenever such rentals are significant.

Here the bond interest has been earned  $2\frac{1}{2}$  times over. In other words, the income available is 250 per cent of the interest requirements, or it might be stated that "earnings exceeded the interest requirement by 150 per cent." It is necessary that this margin be studied over a series of years to see how it stands in poor as well as in good years. A stable margin of safety is more to be desired than a wide margin.

Some prefer to figure coverage by dividing the fixed charges into the balance of income before income taxes because such income taxes are only payable on any balance remaining after such charges. Strict logic is wholly on the side of this second approach. Yet the first method which grew up when income taxes were relatively unimportant will probably continue to be used by many engaged in financial work. A first argument will be that of using the more "conservative" measure of coverage. The coverage *after taxes* may give a more representative figure for some corporations of performance in ordinary or normal years than one *before taxes* in war years when excess profits taxes are scoping off the unusual earnings of such years. A second argument is that interest coverage *after taxes* yields a figure more comparable to the customary preferred dividend coverage figure. Commonly the latter is found by dividing the net income before interest but *after taxes* by the sum of the interest and preferred dividends. This over-all or combined coverage figure for the preferred is in turn employed to add the annual results often obtained by the apparently simpler procedure of dividing preferred dividends alone into net *after interest and taxes*. With a small preferred issue and a large bond issue the simple procedure can give a higher coverage for the preferred stock than the bonds and make them appear a safer issue. The investor wants a pair of coverage figures for bonds and preferred stock that will substantially reflect their relative position. This can only be done by treating the preferred as a junior claim whose fortunes like those of a second mortgage,<sup>5</sup> are bound up with those of the prior claims.

<sup>5</sup> Actually this combined coverage figure for preferred dividends plus interest into income *after taxes* ordinarily makes for understatement just as does the dividend coverage alone figured with income *after taxes*. To obtain an over-all preferred dividend coverage figure statistically comparable with interest coverage based on the logically correct net *before taxes* would require a more elaborate calculation than is found in ordinary practice. It would be necessary to divide income *before taxes* by the sum of interest, preferred dividends, and an

Where more than one issue of bonds is to be considered, all the charges of preceding issues must be considered; or else the "times earned" figure may be misleading. The following will illustrate this point:

Income Available for Fixed Charges . . . . .	\$400,000
Interest on First Mortgage Bonds . . . . .	100,000
Balance . . . . .	\$300,000
Interest on Second Mortgage Bonds . . . . .	50,000
Balance . . . . .	\$250,000

The interest on the first mortgage bonds has been earned four times, and, as far as the arithmetic goes, the second mortgage interest has been earned six times ( $\$300,000 \div \$50,000$ ). The figures so stated make the showing for the weaker bonds better than for the prior lien. The error here lies in overlooking the fact that the \$50,000 is a secondary charge that has its fortune linked with that of the first charge. The correct method of stating the coverage for the second mortgage bond interest is: "when combined with prior charges, it is earned  $2\frac{2}{3}$  times ( $\$400,000 \div \$150,000$ )."<sup>1</sup> By this "over-all" method of stating the coverage of successive claims upon earnings, a series of figures will be had which will measure the relative financial strength of the several issues.

Certain minimum standards for "times earned," in order for a bond issue to enjoy "investment" standing, have prevailed from time to time. Formerly, this minimum requirement was about two times for railroads and public utilities and three times for industrial companies. With the persistent decline of interest rates in the 1930's, the tendency was for these standards to be raised until a minimum coverage of three (after taxes) is expected for the more stable utilities in ordinary times and more for concerns with less stable earnings. However, the real problem is less a matter of a formal standard than the reasonable expectation on the basis of all known factors that the company will be strong enough under the most adverse business conditions to continue to meet its debt obligations and avoid insol-

<sup>1</sup>amount equal to the income tax payable if earnings were just enough to pay the preferred dividend. This is the amount a corporation must earn to cover the combined charges once. Such a formula would recognize that the stockholder does not strictly come after the income tax collector but rather *shares* with him in the balance after expenses and interest.

vency. Large industrials, with their more fluctuating earnings, may nevertheless be able to care for unearned interest and even some debt retirement by drawing on working capital when current earnings are inadequate. Even concerns with poor earnings may have depreciation allowances representing a factor of cash strength hidden from the unskillful reader.

As pointed out before, a business ordinarily counts on the sum of its depreciation allowances plus retained earnings for the year as providing funds for business uses.<sup>6</sup> In good years, these may be used for asset replacement or expansion or for debt reduction. In years of poor earnings when even asset replacement is at a minimum, they (or the net balance of depreciation minus any deficit or reduction of Retained Earnings) may be used to care for unearned interest or required debt repayment.<sup>7</sup> Some would recognize the special noncash nature of depreciation expense by making a supplementary calculation of interest coverage using the net before depreciation. Probably most analysts prefer to omit such a calculation and instead note to what extent the depreciation allowances provide a margin for meeting not only the fixed charges and also any compulsory debt retirement; the latter does not appear in the income statement but nevertheless has to come out of the cash flow generated by operations. Such debt repayment may be in the form of serial maturities of bonds or term loans or of minimum sinking fund requirements. During the 1930's, disturbing to railroad finances, attention was frequently directed to the depreciation allowances as a factor enabling some roads to care for unearned interest and serial debt maturities, chiefly equipment trust obligations.

<sup>6</sup> See Chapter VIII. Other noncash expenses, such as bond discount amortization, and similar items mentioned there should also be recognized.

<sup>7</sup> In the decade 1935-1944, Hudson Coal Company showed interest charges earned in only two years. Its depreciation and depletion allowances were so substantial that cash flow from operations nevertheless cared for all interest payments and after 1939 permitted the Company to more than cure its default in required sinking fund. Interest charges were reduced from \$1,682,000 in 1935 to \$1,179,000 in 1944. Arthur Jansen, "Safety of Hudson Coal Interest Charges Improved," *Barron's*, March 26, 1945. An important factor in Western Union's ability to pay for a \$60 million modernization program begun in the 1940's and at the same time reduce funded debt is found in its substantial depreciation allowances. In 1946, the Company increased its allowances to provide for the heavy obsolescence charges over a twelve year period. C. F. Horlacher, "Western Union's \$60 Million Future," *Barron's*, May 12, 1947, p. 22.

Depreciation will be much more important in some fields than others. The air transport field with its relatively large fixed investment in short-lived planes is an example of an industry where depreciation is important. In 1948, American Airlines, Inc. reported a net operating deficit of \$1,855,000 before interest of \$1,092,000 on its \$40,000,000 debt. But depreciation expense amounted to \$12 million or more than 13 per cent of the \$89 million gross revenues.

**Income taxes.** Income taxes are levied upon the balance after interest. Certain points of interest to the statement reader may be mentioned here even though some of them have been suggested earlier. (1) The analyst is concerned with the possibility that the tax may later prove to be over- or understated. Over the long run, the subsequent corrections will make the total record accurate, but short-run judgments about the earnings or working capital position of a particular year may be seriously in error. (2) Differences between the income reported for tax purposes and for the public will have interest. Footnotes to the income statement may provide information on the point.<sup>8</sup>

(3) One should be alert to the indirect influence of taxes upon operations. When very high taxes appear temporary, as in the case of excess profits levies, corporations find it advantageous to spend on those expenses, such as research, development, and mineral exploration, for the hope of future profits in less heavily taxed periods. Even capital expenditures, as for new equipment, become advantageous if they may be depreciated rapidly for tax purposes and yet are likely to have utility after the write-off period or will improve competitive position.

(4) The tendency to use debt instead of stock issues for financing is encouraged by high tax rates. Corporations subject to a 50 per cent tax rate have to earn \$2 before taxes from operations to be able to have earnings of one dollar for the stockholder investor. In effect, such a tax doubles the cost of owned capital. Only the single dollar needed for interest has to be earned to care for the income claim of the creditor. However, most concerns after incurring debt are likely to increase the proportion of earnings to be retained to provide for

<sup>8</sup> For examples see B. B. Greidinger, *Preparation and Certification of Financial Statements* (New York: Ronald Press Co., 1950), p. 292.

debt retirement. The reader will expect the proportion of earnings devoted to dividends to decline as the relative debt burden rises.

(5) Finally, the corporation reporting any substantial nonrecurring or extraordinary gains or losses should help the reader in his interpretation by stating the portion of the income tax or tax reduction attributable to such special items.<sup>10</sup>

**Extraordinary and nonrecurring gain and loss.** During the 1940's, a considerable debate arose over the proper form for reporting gains and losses of an unusual character. The American Institute of Accountants, the American Accounting Association and the Securities and Exchange Commission participated in the controversy.<sup>10</sup> Although accounting practice prior to that time was neither uniform nor clearly enunciated, one standard was the inclusion of such gains or losses in the earnings if clearly occurring within the reporting period.<sup>11</sup> Any items which were (a) the result of prior years' operations or (b) not actually of a gain or loss character were to be re-

<sup>10</sup> The various aspects of this principle are discussed in the American Institute of Accountants Research Bulletin No. 23, Accounting for Income Taxes (1944). Hilton Hotels Corporation in its six year summary of its earnings (1951) reported the net profit after income taxes for its ordinary operations and then had a section devoted to other additions and deductions from income, including such items as gain or loss on the sale or abandonment of capital assets, refinancing expense, profit on sale of securities, special contribution to pension trust, and interest on an additional income tax assessment. This section shows its own provision (or credit) for applicable income taxes.

<sup>11</sup> The position of the Institute is stated in Research Bulletins Nos. 32 (1947) and 35 (1948) where the current operating performance statement is advocated as against the all-inclusive income statement. Yet the committee directs attention in the first bulletin "to the undesirability in many cases of the dissemination of information in which major prominence is given to a single figure of net income or 'net income per share'" and recommends that when such income data are published the amount of excluded items be published separately and simultaneously" with the net income figure (p. 264). Espousal of the all-inclusive income statement also called the 'clean surplus' doctrine may be found in the bulletin of the American Accounting Association, Accounting Principles Underlying Corporate Financial Statements, *Accounting Review*, June, 1941, pp. 133-139. The Securities and Exchange Commission provided for a statement of gains and losses not included in the determination of net income at the bottom of the income statement as filed with it in Rule 5-03 item 17 revised Regulation S-X (Dec. 1950). For comment see Institute Research Bulletin No. 41 (1951).

<sup>11</sup> Examples: Loss from hazards not covered by insurance as by fire, hurricane, or floods, gain or loss on the sale of fixed assets or securities, gain or loss from foreign exchange fluctuations, gain or loss from the repurchase or redemption of debt, refinancing expense, special litigations costs with any loss or gain therefrom, and life insurance proceeds.

garded as surplus changes and not a part of the income statement.<sup>12</sup> This test is not always easy to apply in practice. Capital gains and losses from the sale of securities or fixed assets are realized at a definite time but may represent gradual value changes over a period of years or incorrect allowances for depreciation in the past. Such reasoning often led to their treatment as surplus items. Even a loss definitely occurring in a given year might, if it were large and unusual, be argued to be a proper surplus charge on the economic theory that the retained earnings represent in part an accumulation of "risk premiums" for business hazards that occur irregularly.

But recent years have seen the accounting profession giving increased attention to the reaction of statement readers to their handiwork. They have noted the undue but common overemphasis upon the net income figure or net earnings per share of common stock. Interestingly, this discovery of the weakness of the ordinary reader has led to opposite schools of thought: the first, that net income should reflect only the ordinary and regular elements of gain and loss; and the second, that net income should be all-inclusive. The first group reasons that only the gains and losses of regular recurrence are suitably used as a basis for the projection of future earnings probabilities. Probably this point of view is most justified when the earnings for the immediately preceding year are used for forecasting the near-term future. Much speculative activity is based upon such short-run projections. The second group argues that irregular items relegated to the surplus account are overlooked by ordinary persons studying the net income record. Gain or loss closely related to operations may be lost sight of. Also they argue that, whatever the cause, only long-run earnings that encompass all of the owners' profit and loss can be an adequate basis for judgments of security valuation. Such a measure is to be had only by including the extraordinary and irregular in the reported net income.

A desirable solution is the full reporting of two figures, one that

<sup>12</sup> Examples: (a) Additional assessment for or refunds on Federal income taxes for prior years, recovery of receivables previously written off, and correction of accruals for prior years. Also note argument in text for classification of such items as gain or loss from sale of fixed assets here. (b) Dividend distributions, surplus (or retained earnings) changes resulting from the purchase or sale of stock at a price differing from the amount paid-in, write-down of the intangible asset good will, and transfers to and from "appropriated surplus" accounts of a "surplus reserve" nature.

excludes and one that includes the extraordinary and irregular gain and loss elements. But the reader needs to go behind both figures, because neither may be wholly suitable for his purpose. No single treatment will ever be universally satisfactory because the interests and purposes of readers differ. A commercial banker making a term loan may study the income statements to discover the probable cash likely to be generated by operations to pay not merely interest but the principal installments of his customer-borrower. A speculator is interested in a short-term income projection as it may influence market value. The investor will be concerned about long-term earnings and dividends both as to probable amount and stability.

Where these unusual items are attributable to operations of prior years and are material, and their allocation to such earlier years is reasonably clear cut, as in the case of income tax readjustments, the business and its accountants might well consider reporting a reconstructed set of income statements with the year-by-year data revised. The analyst is interested not merely in the total or average earnings, but also in their year-by-year distribution and stability. In other cases, even though the unusual items are admittedly related to regular operations, no such nice reconstruction is practicable and the reader can only use such figures to adjust or correct his average of past net income from ordinary sources. In still other cases, items may be genuinely extraordinary in the sense that they may never recur again. Possible recurrence becomes a study in probabilities or risk. Past occurrence cannot be made a basis for an exact measurement of future probabilities. The accountant, who is necessarily limited to making a record of the past, can only hope to minimize misleading inferences by those who use the statements he prepares by adequate disclosure and the use of forms that are likely to minimize misinterpretation. Sometimes there is no one best form and the optimum must be selected by the reader in the light of surrounding circumstances. Even the annual report itself may include what amounts to three presentations of income: (1) a formal and detailed certified statement suitable for the use of the skilled analyst, (2) a more condensed form for a number of years in which detail is subordinated to illuminating broad tendencies, and (3) a brief table of a few major elements of income and profit, usually for the last two years. However well this job may be done, a large job of interpreta-

tion and application will remain for the reader or analyst, who will find the material for his work in the first of these three.

The individual reader can formulate his net income data with such inclusions as best fit his objective. When the results are to be used by others and a reasonable difference of opinion might exist over the appropriate handling of the extraordinary items, two courses of action are possible. For example, such figures as the "times interest earned" or "earned per share of common stock" might be calculated on the two alternative bases, as before and after the inclusion of extraordinary items or only the one calculation deemed most suitable given. The latter figure might be qualified by accompanying comment on any material items that might have been handled differently.

**Dividends.** The stockholders' attention is likely to center upon the net income or net profits and any dividend distributions. The preferred dividends are unlike the interest charges in that their payment is contingent upon their being earned, and they are spoken of as "contingent charges" in contrast to the "fixed charges" on bonds. They may be deferred without any admission of insolvency. In this respect, they are like the dividends on common stock, a similarity that leads to the practice of stating the net income at this point as so many dollars earned per share of preferred. Thus, net income of \$250,000 with 15,000 shares of preferred stock outstanding, as in the following table, would be stated as \$16.67 earned per share of preferred. Except in the rare cases where there is participating preferred stock, the holder of this stock has no expectations beyond his stated rate of dividend. (But, if this preferred participated equally with the common after the latter had received a \$3 dividend in any year, the preferred would be said to have earned \$8.87 on a participating basis.  $\$6 + \$100,000 \div 35,000$  shares. Any preferred dividend in excess of \$6 would depend upon a similar declaration upon the common in excess of \$3.) Any excess is merely a protective margin. This condition suggests the advisability of stating the margin of safety for preferred shares in the same manner as for bonds; that is, the number of times the charge has been earned. In calculating the "times earned," the preferred dividends would be treated like the interest on a junior issue of bonds.

If, in the last illustration used, it is assumed that the corporation had \$3,500,000 of capital stock, of which \$1,500,000 was 6 per cent

preferred and the remainder common, both of \$100 par value per share, the statement would read:

	<i>Amount</i>	<i>Times Earned</i>
Income Available for Interest . . . . .	\$400,000	
Interest (first mortgage bonds) . . . . .	100,000	4.00
Balance . . . . .	<u>\$300,000</u>	
Interest (second mortgage bonds) . . . . .	50,000	2.67
Net Income (or Net Profit) . . . . .	<u>\$250,000</u>	
Preferred Dividend (\$6 on 15,000 shares) . . . . .	90,000	1.67
Available for Common . . . . .	<u>\$160,000</u>	
Common Dividends (\$3 on 20,000 shares) . . . . .	60,000	
Retained Earnings . . . . .	<u><u>\$100,000</u></u>	

\* Earned on Common Stock, \$8.00 per share.

Just as the per cent earned on total investment (bonds plus tangible net worth) is studied as a measure of general earning power, so the per cent earned on the tangible investment of the common stockholders reflects the "productivity" of their capital contribution. The latter per cent will depend on the former per cent and the cost of the funds derived from bondholders and preferred stockholders. When the rate paid these more protected investors is lower than that earned on all of the funds used, the common stock equity will be able to show a correspondingly higher return than the total capital earns, and *vice versa*. In every case, the reasons for any changes in earnings rates should be sought, because the reasons are likely to be as important as the changes.

The situation can often be visualized best by setting down the capital structure and showing opposite the shares of the various investors with the respective rates. Such figures for our illustrative company would read:

	<i>Amount Invested</i>	<i>Share in Earnings</i>	<i>Rate of Return</i>
First Mortgage Bonds . . . . .	\$2,500,000	\$100,000	4 %
Second Mortgage Bonds . . . . .	1,000,000	50,000	5
Preferred Stock . . . . .	1,500,000	90,000	6
Common Stock . . . . .	2,000,000	160,000	4
Retained Earnings (Surplus) . . . . .	2,000,000	<u>160,000</u>	<u>4</u>
Totals and average return . . . . .	<u>\$9,000,000</u>	<u>\$400,000</u>	<u>4.4%</u>

In this case the common stockholders actually made less upon their total investment, including retained earnings, than the rate paid for some of the prior obligations. If the preferred could be repurchased

for par, retained earnings would earn more invested in that way than the average dollar of invested long-term funds.

The rate earned upon the common stock equity is particularly significant in growth situations because a corporation earning a high rate of return can finance a substantial part of that growth from retained earnings and build earning power per share correspondingly. A low rate of earning power compels a company either to expand very slowly or to resort to financing. The company with a high return can offer a better margin of coverage and more rapid repayment when it does use prior securities.

When high return on common stock equity is more the result of profits from heavy borrowing than of a high return on total investment, the corporation is likely to need to use much of the extra return for debt reduction. The low rate paid for such borrowing usually means that earnings retained for debt repayment save but little. Consequently they add but little to earnings for common, especially after the added income tax on income from which the interest was previously a deduction. Nevertheless the additional safety from debt reduction may be ample justification for such retention and debt payment.

The position of the common dividend is not judged by the "times earned" device, chiefly because it is a variable itself. The coverage of all the prior charges is a measure of the position not only of the weakest junior issue but also of the common stock, the general strength of the latter being greater as the measure rises. Sometimes the percentage of net profits available for the common stock that is distributed and the percentage that is retained are studied. The proportion should not be a matter of rule, but should be governed by the need of the business for funds and the relative advantage of retained earnings over new financing. In the 1930's when business was depressed, corporations were able to distribute most of their earnings because the opportunities for expansion were small. A few concerns were under pressure to reduce debt. In the years following World War II, the reverse was true, not only because growth was resumed in a large way, but also because additional dollars had to be invested in current assets because of a rising price level. Moreover, depreciation allowances were less than the dollar cost of replacing retired fixed assets.

**Studying dividend outlook.** The probable dividend policy of a corporation is best judged from its past record with suitable allow-

ance for changing external business conditions. Sometimes the management states its general ideas in the annual report. The balance sheets are as necessary as the income statements to learn why earnings have been retained and to what extent. Sometimes a period of bad times depletes working capital, and retained earnings are required for its restoration. On occasion, a concern has a capital structure that is top-heavy with bonds or preferred stock, and the balance can be corrected only by retirement from earnings. Most frequently, a need for improvements and expansion provides the reason, and earnings provide a means without the recourse to the issuance of additional securities.

No definite rule can be laid down for judging dividend possibilities, but six chief factors should be weighed: (1) the presence of retained earnings (earned surplus) not subject to restrictions; (2) the amount of net profits for the preceding or current period; (3) the condition of working capital; (4) the stability of earnings; (5) plans for expansion or contraction; and (6) the temperament of the directorate. The presence of a balance sheet surplus is ordinarily a legal prerequisite to cash dividends, although a few states permit distributions from current earnings while a deficit exists. A fair showing of profits and sufficient surplus of working capital are most desirable. The opinion of the board of directors as to all of the factors, plus their personal temperament, will determine the dividend declarations. An unstable dividend rate is normally associated with unstable earnings, and yet some directorates maintain a fairly steady dividend rate through good and poor times for the sake of the investment standing of the corporations' securities. The accumulation of surplus and a reasonably strong cash position are essentials. The effect of expansion plans is similarly dependent upon the directors' preference for retaining profits or selling securities to finance the expansion. Industrial and railroad corporations finance a major part of their expansion through earnings retention. Such debt as they have incurred in recent years they have planned to retire from retained earnings and earned depreciation funds. Public utilities offer a sharp contrast; they finance the bulk of their growth by the sale of securities.<sup>13</sup> When common

<sup>13</sup> The situation is reviewed in H. G. Guthmann, "Institutional Investment and the Problem of Equity Financing," *Law and Contemporary Problems* (Durham, N. C.: Duke University), Winter, 1952, pp. 172-197.

stocks are difficult to sell at suitable prices, they sell prior convertible issues. They distribute the bulk of their earnings in dividends.

**Stability of earnings.** Stability of earnings over the business cycle is important. Because net operating earnings are generally the chief determinant of the final net income, the factors that cause the former to vary receive the closest study. The few concerns that receive a substantial portion of net income from outside investments should be given special scrutiny, because, as previously suggested, dividend income does not necessarily reflect earning power.

One measure of stability or variability is to measure the "average deviation" of earnings. An average is obtained of the differences between earnings in each year and the average earnings for the period. This average variation is then stated as a percentage of the average earnings. The chief defect of this device lies in the fact that persistent growth, especially if punctuated by mergers, will create variations in the most stable kind of business. A possible solution of this difficulty for those who are statistically inclined would be to measure the variations not from average earnings, but from a secular trend fitted to the earnings. A simpler method would be to study the per cent earned on the total investment; that is, bonds plus tangible net worth—which would allow for the growth factor.

The simplest approach that is used most often is a graphic presentation upon a type of charting paper that shows relative fluctuation. (Ratio or semi-logarithmic scale is discussed in the next chapter.) This approach is especially useful for intercompany comparisons over a period of years.

Over a short period and when the growth is not a large disturbing factor, the actual earnings figures in dollars are useful. Such figures for twenty-nine industrial groups, the railroads, utilities, banks, and insurance companies are shown in the table on the following page.<sup>14</sup>

<sup>14</sup> *Moody's Manual of Investments*, Industrial, 1951, pp. a12-a14. Other comparative figures for various industries are compiled annually by the National City Bank of New York and published in its monthly bulletin (April issue). The old list of 871 industrials cited in the previous edition of this textbook has been replaced with a new one of 430 companies. Many unimportant companies were dropped and 52 new companies of rising importance added. The two lists have a very similar trend, but the old list showed a net deficit for the combined industrials; the new one gives a small earnings balance in 1932. Many companies with huge deficits in 1932 never regained their former importance and were subsequently dropped.

**EARNINGS OF LEADING CORPORATE GROUPS:**  
**1929, 1932, 1937, 1940, 1950**

**BALANCE AVAILABLE FOR PREFERRED AND COMMON DIVIDENDS**  
 (in millions of dollars)

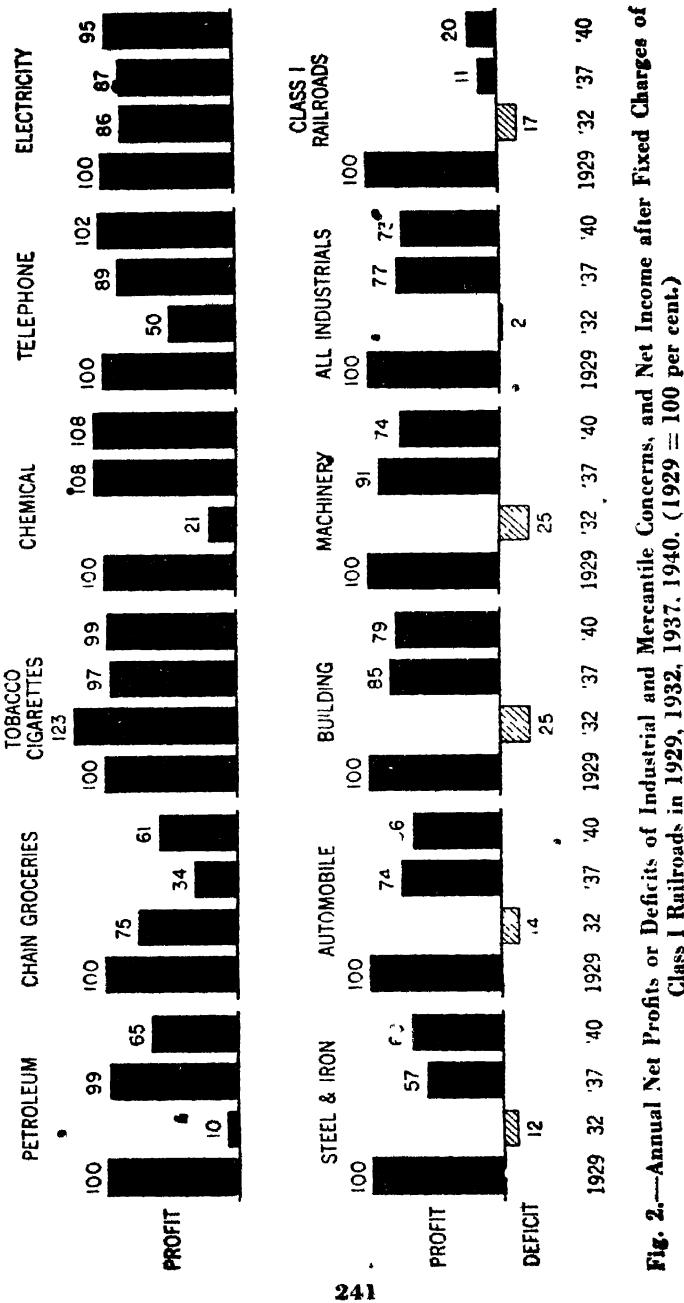
Corporate Group	No. of Com- pa- nies	1929	1932	1937	1940	1950
Aircraft	7	62	d 1	90	505	592
Auto & Truck	13	3476	d 475	2560	2390	1,0411
Auto Parts	22	899	d 194	620	686	2180
Building	24	1059	d 264	905	842	2846
Chemical	21	1672	358	1807	1811	6933
Coal	4	163	d 24	6	76	249
Containers—Glass	3	77	43	134	110	337
Containers—Tin	3	337	158	285	289	516
Drugs	7	373	254	360	422	1080
Electrical Appliances	10	1432	70	1157	1024	3590
Fertilizer	5	66	d 35	71	50	192
Baking & Biscuit	6	460	262	197	198	452
Dairy	3	445	204	228	204	576
Meat	5	309	d 78	187	272	433
Machinery	43	1970	d 517	1795	1456	4069
Copper	3	1266	d 289	901	865	1750
Office Equipment	8	446	d 15	355	248	72 E
Paper	8	244	d 113	269	376	1483 E
Petroleum	22	5689	549	5605	3690	1,6270
Printing	3	62	6	25	29	46
Grocery Stores	7	540	404	184	332	848 E
Department Stores	9	488	d 80	335	442	1292
Mail Order	2	434	d 82	500	591	2178
Rubber & Tire	4	356	d 126	243	365	1277
Shoes	6	260	96	121	137	276
Steel	13	3619	d 422	2087	2500	6711
Textile—Cotton	5	74	d 41	52	74	336
Textile—Wool	2	63	d 73	d 31	37	63
Tobacco—Cigarettes	5	862	1050	956	982	1345
<hr/>						
All Industrials	430	33682	463	2,7850	2,7181	8,3047
Railroads—Class I	135	8968	d 1392	980	1786	7834
Electrical Utilities *		5850	5060	5090	5570	8320
Gas Utilities	30	414	308	267	291	595
Telephone—Bell system †		2066	1113	1833	2105	3470
Member Banks of Fed. Res. Sys.		5566	d 2549	3366	3491	7800
Insurance	10	501	117	380	395	970

\* All private companies with net of \$250,000 or more

† After deducting subsidiary preferred and common dividends

d = deficit.

E = Preliminary estimate.



**Fig. 2.—Annual Net Profits or Deficits of Industrial and Mercantile Concerns, and Net Income after Fixed Charges of Class I Railroads in 1929, 1932, 1937, 1940. (1929 = 100 per cent.)**

They illustrate the general principles stated in the following list of factors that affect relative stability of earnings. A general factor affecting all corporations during the period shown here is the falling price level in the years 1929-1932 and the subsequent rise, which was particularly large in the decade 1940-1950. Even when physical volume was maintained at a fairly constant level, as it was for food and grocery lines during a severe price decline, dollar volume and profits would drop. The recession of 1929-1932 is used here as the most severe test of earnings stability to be found in recent years. It is illustrated for a few representative industries in the accompanying graph. Milder reactions in business can be studied in the figures for the recession of 1937-1938 and the lesser reaction of 1948-1949. The combined effects of growth and inflation upon various fields can be studied by a comparison of the 1940 and 1950 figures shown in the table.

The following list will be of assistance in detecting the more important conditions that cause some companies to enjoy greater stability of earnings than others:

1. *Goods that have a moderate or low price per unit will tend to sell more steadily than goods with a high price per unit.* The business of the five-and-ten-cent store would be expected to be more stable than that of a department store.<sup>15</sup> The rule is ordinarily as true for goods sold to producers as for goods sold to consumers. During periods of business stress, minor repairs and replacements are continued, expensive maintenance is reduced as far as possible, and major capital expenditures are eliminated. Students of business affairs advocate a reversal of the latter part of this policy, insofar as possible, arguing that purchasers in bad times secure the benefit of low prices and avoid the confusion that attends expansion undertaken while the management's attention is engaged in pushing production at top speed.

2. *Goods regarded as necessities will show greater stability in*

<sup>15</sup> The influence of higher-priced merchandise on business in periods of uncertainty is illustrated in the case of S. S. Kresge Company, which reported that its lower sales in 1930 were due mainly to the poorer showing of its green-front stores, retailing merchandise priced from 25c to \$1, whereas the volume of the red-front units, selling articles priced from 5c to 25c, was approximately the same as in the preceding year.

*sales volume than those in the luxury class.* Occasionally, a luxury article such as tobacco, because of low unit price and habitual purchase at short intervals, will show steadier demand than a necessity, such as men's suits.

3. *Narrow price fluctuations of the goods handled make for stable earnings.* Typically, raw materials, especially in the agricultural group, are highly fluctuating as compared with finished products. As the labor element grows in the price of an article, the price variability tends to diminish. Sugar refiners and meat packers, although supplying necessities of moderate unit price, have notoriously unstable profits owing to inventory price fluctuations. As manufacturers, an unusually large per cent of their costs are for the raw materials supplied almost directly by the agricultural producers. Monopoly or near-monopoly may be helpful in softening the ravages of price declines. In this respect, patent and trade-mark protection may be helpful by enabling the producer to delay price reductions long enough to dispose of high-cost inventory. Trade-marked food products not only show higher profit margins but are also more stable if not in too direct competition with highly competitive staple lines. The public service corporations, with their regulated rate structures, have stable prices, which are adjusted slowly to changing conditions. As a result, mildly falling prices tend to be favorable by cutting costs, and inflation, unfavorable by raising costs.

4. *Rapid turnover of inventories will result in greater stability of earnings.* The losses and gains in inventory through price fluctuation are reduced when merchandise is not held for long. In this respect, merchants have an advantage over the manufacturing group, especially when the period of manufacture is long. The major rubber goods manufacturers, importing their raw material from great distances, are at a disadvantage. The increasing use of domestic synthetic rubber is important in this respect. In the past, the fortunes of these concerns could be told almost without regard to volume by studying a chart of rubber price fluctuations.

Summarizing, we may say that the degree of earnings stability will depend on the stability of dollar volume and net profit margins. The first two factors mentioned above relate to physical volume; the last two, to the price and turnover factors, particularly as they influence the profit spread during periods of economic adjustment.

although the price factor may also be important as it affects the dollar rise of the profits of a constant physical volume.

**Factor of management.** The discussion of the earnings statement has shown what may be revealed in the study of the figures with a minimum of reference to the personal factor and outside conditions. The work of analysis would be incomplete, however, if it did not insist upon the importance of considering the skill and other qualifications of the management. Whenever one states that a certain economic factor brought about the failure of a business, one may usually add, "... and the management either failed to foresee the difficulty or failed to solve the problem presented." For, after all, it is the ability of the men who face these matters that largely determines the outcome.

In the end, however, managerial ability is not an abstract quality, but leaves its record in the performance of the company. Incompetent management that indulges in speculative financing, engages in excessive expansion, distributes capital as profits, and in general fails to meet the level of achievement set by competitors writes a record in the financial statements. Sometimes the message is obscured by manipulation of the accounts, but more often it is missed because of the inability of the reader to grasp the meaning, either through his own lack of skill in reading or because the management refuses to give any adequate statements.

**External causes of failure.** Certain outside conditions over which management has little or no control must be kept in mind as potential sources of disaster. Although it is the administrator's problem to "see all and know all," he is handicapped in meeting even known conditions by the fixed form of much of his concern's investment; and so even some foreknowledge may be inadequate to avoid the baneful effects of these external factors, a situation that makes it necessary for the analyst to go outside the statements and consider the setting of the business. Probably the chief of these external factors are:

1. *Excessive competition.* This does not refer to cases where ordinary competition eliminates a business under inferior management. A new retail business, for example, may drive out an older one with less progressive methods. On the other hand, new businesses often create a demand for new goods with little or no harm to the pro-

ducers already existing. Excessive competition ordinarily refers to cases where a considerable fixed capital investment is employed and the productive capacity has been expanded far beyond what the market can absorb. Due allowance must be made for plant that is obsolescent and can no longer hope to produce at a reasonable level of prices, for idle plant that cannot be employed because of abnormal depression conditions, and for the fact that plant can rarely be used to the full rated capacity but must possess some leeway in order to meet the demands of peak requirements. This latter factor of "normal idleness" is expressed by indirection in the conventional load factor, which is the ratio of average demand or plant utilization to maximum, or peak, utilization.<sup>16</sup>

When overdevelopment of an industry characterized by considerable fixed assets does exist, excessive competition follows. Such concerns, once started, are under the necessity of meeting a constant burden of expenses. Unlike some personal service businesses with very liquid assets, they cannot move to new surroundings. Competing railroads have been a choice illustration. With the growing use of large and expensively equipped plants, this same difficulty is bound to appear in industrial enterprises from time to time. Among public utilities, competition is supposed to be absent but government-owned projects sometimes compete with existing private plants.

2. *Business cycle.* The irregular fluctuations in business activity that are spoken of as the "business cycle" have a relation to the individual enterprise similar to that between weather and agriculture. Like the weather, the cycle is "much talked about but very little done about it." In adjusting to the storm and sunshine of the business atmosphere, the individual concern can only lay out a general policy designed to conserve the happier results of good times in order to balance the woes of hard times. Differences in skill and good fortune in meeting adverse conditions are brought out by the comparative study of similar concerns over a sufficiently long period to include both prosperous and poor times.

3. *Change in public demand.* This factor may operate through either the passing of a fashion or the introduction of a substitute.

<sup>16</sup> Failure to recognize these factors leads to much loose and inaccurate generalization about excessive expansion. For a partial answer with reference to the much-discussed shoe industry, see "Is the Shoe Industry Over-built?" *Barron's*, July 30, 1934, p. 6.

The substitution of the automobile for the horse carriage changed the course of the carriage-building industries. The advent of motion pictures brought adversity to vaudeville and the theater. In turn, television had repercussions upon motion picture audiences. Changes in demand can be anticipated in part by a reasonable familiarity with external conditions. They will be noted early in the financial statements where sales and earnings are typically affected gradually and fail to keep pace with those of general business.

4 *Political conditions* cover a number of matters, the chief of which are regulation, reform, and taxation. Regulation has been important chiefly among the public service corporations. On the one hand, this regulation has limited return; but on the other, it has restricted competition, which was usually costly to both the companies and the consumer public in this field. Other important financial effects that political conditions have had are limitations upon adjustment to new conditions (as in the case of truck competition with the railroads), regulation of new security issues, and the setting of service standards.

Reform has included a great deal of important legislation, among which may be mentioned antitrust laws, factory inspection and workmen's compensation laws, restrictions upon the employment of women and children, and the host of laws introduced by the Roosevelt administration beginning in 1933.

Taxation, like the subject of business cycles, is worthy of special study by itself in view of its many and powerful influences upon business earnings and survival. Unwise state and local taxation particularly may place local industry under a severe handicap in its attempt to meet the competition of less burdened concerns in the struggle for national markets. Even when taxes are uniform, they may be raised to such a high level as to force business either to raise prices to a point that will discourage consumption or, if prices are unchanged, to suffer an inadequate return or losses.

**Summary.** From the foregoing material on the income statement certain relationships, or ratios, appear to be most commonly employed. These are:

1. Gross profit margin.
2. Net operating income margin.
3. Per cent relation of the various operating expenses to net sales.

4. Relation of the depreciation allowance, or, if possible, depreciation and maintenance, to the gross fixed operating assets.
5. Per cent of nonoperating income to the nonoperating assets producing such income. If these assets are stocks, an attempt to learn actual earning power will give an even more useful figure than the income collected.
6. Times interest, or fixed charges, earned.
7. Times interest plus preferred dividends earned.
8. Per cent of total earnings (interest plus net profits) to total tangible investment (bonds plus tangible net worth).
9. Per cent earned upon the tangible common stock equity.

These relationships are interpreted in the light of changing prices, conditions affecting business generally and the particular line of business, and any special circumstances within the corporation. Because stability of earnings makes for greater predictability on the basis of past performance, the factors that might make for that condition are checked closely. The possible influence of management and of external changes likewise requires attention as a part of the setting in which profits are made.

In reading the income statement, the reader must constantly remind himself that it is a historical record of the past, and that because of his own interest in the future he must recognize changing conditions that will alter its significance. Significance depends upon the degree to which the future will be like the past. This likeness is a matter of probability and varies with the times, the industry, and the company. On the internal side, the reader may find operating income "nonrecurring" in fact as when a Marshall Field & Company discontinues certain important but unprofitable manufacturing and wholesaling operations. Or reported income may be more unstable in appearance than reality, as when railroads receive a large lump of back mail pay, much of it earned in previous years. On the external side, he must make judgments as to the probable weight of changing external factors, such as income tax rates and the price level. During years of rising prices, for example, he expects reported earnings to be high relative to invested capital. Profits tend to rise proportionally with rising dollar sales, whereas the book value of the investment in assets lags behind. Profits are made to appear high because of inventory appreciation and inadequate depreciation allowances. When

prices flatten out, inventory appreciation disappears and profits will generally appear to be less. Then a period would follow when the *rate* of return might well decline as old assets are replaced at the new price level, increasing the apparent invested capital and raising the depreciation expense. Judgment about matters of general principle can be improved by study and will continue to grow as the experience of the reader broadens.

## CHAPTER XI

### Supplementary Information

**Information to supplement statements.** In concluding the general discussion of the subject of this book, attention is drawn to certain information that is so frequently associated with the two financial statements that any discussion that did not consider it would be incomplete. The forms employed by mercantile and bank credit men include questions on these supplementary points needful for clarifying the figures presented by recipients of credit. Those who furnish the statements indirectly received by credit men also attempt to obtain and include such pertinent information. Similarly, the Securities and Exchange Commission requires supplementary information in connection with the financial statements of corporations registering new security issues.

The consideration of this supplementary information falls logically with the matter of the forms used first for gathering and then for analysis and filing. The discussion with respect to the use of statements for mercantile and bank credit purposes is taken up first, and then their use for investment purposes. The reasons for this divided discussion are (1) the greater emphasis by creditors upon the balance sheet and solvency, and by investors upon earnings; and (2) the ability of the former to obtain information first-hand, where the latter depend almost entirely upon material generally available at second-hand to all and can rarely demand supplementary information. However, the rise of "term loans" by commercial banks (i.e., loans to be amortized over a period of years, usually three to five years), has made for greater study of earnings and of the type of approach used for investment purposes.

**Forms for acquiring statements.** A statement form adopted and recommended by the National Association of Credit Men, the short and long forms suggested by the Federal Reserve Bank of New York for member banks to use in obtaining statements from bor-

rows, and the long form for corporations designed and approved by the Bank Management Commission of the American Bankers Association are shown here.<sup>1</sup> Variations in form show differences in the classes of customers—small tradesmen not being expected to have as elaborate statements as large ones—and also differences among creditors in their ideas as to what is essential and what they believe they can obtain from their customers. The form of the National Association of Credit Men is much fuller than the one originally recommended, and the titles, although simple, are designed to prevent any misleading classification. The association publishes other forms containing varying amounts of detail, particularly as to earnings, and also has a separate form for a detailed profit and loss statement. The Federal Reserve Bank of New York forms show slightly more conventional account titles. The form presented by the American Bankers Association shows many similarities to the Federal Reserve Bank long form. The longer forms are especially interesting in suggesting the kind of supplementary information useful in statement analysis. Their request for earnings statements is in marked contrast to early practice.

**Customers' receivables.** Of the supplementary information that is related primarily to the balance sheet, that about the accounts and notes receivable may be considered first. A detailed list of the customers' accounts would be of interest to the management; but for the outsider, a grouping that will throw light on collectibility is sufficient. A simple division showing the accounts past due and those not yet due would be very helpful. In the case of retailers, where a running account often prevails and amounts are paid "on account" rather than to clean up specific invoices, any amounts owing in excess of the charges for the preceding month might be classed as "past due." An estimate of the amount "collectible," subject to the usual

<sup>1</sup> Illustrative forms both for obtaining and for analyzing statement material may be found in: (1) R. P. Ettinger and D. E. Golob, *Credits and Collections* (New York: Prentice-Hall, Inc., 3rd ed., 1949), pp. 127-128; (2) A. F. Chapin, *Credit and Collection Principles and Practices* (New York: McGraw-Hill Book Co., Inc., 5th ed., 1947), pp. 317-340; (3) R. A. Foulke, *Practical Financial Statement Analysis* (New York: McGraw-Hill Book Co., Inc., 2nd ed., 1950), pp. 117-125; (4) Chas. W. Williams, ed., *The Credit Department, a Training Ground for the Bank Loan Officer* (Philadelphia: Robert Morris Associates, 1946). Chapter X, "Credit Department Forms," *Financial Statements for Bank Credit Purposes*, a pamphlet by the Robert Morris Associates (1951), briefly states desirable statement content rather than form.

**FINANCIAL STATEMENT OF**

Kind of Business \_\_\_\_\_ Address \_\_\_\_\_ State \_\_\_\_\_

At Close of Business on \_\_\_\_\_, 194 \_\_\_ City \_\_\_\_\_ State \_\_\_\_\_

**ISSUED TO**

THIS FORM APPROVED AND PUBLISHED BY THE NATIONAL ASSOCIATION OF CREDIT MEN.  
 For the purpose of obtaining merchandise I am you on credit or for the extension of credit, we make the following statement  
 In writing, intending that you should rely thereon respecting our exec [initials] condition.

(PLEASE ANSWER ALL QUESTIONS WHEN NO FIGURES ARE INSERTED WRITE WORD "NONE")

ASSETS	Dollars	Cents	LIABILITIES	+ Dollars	Cents
<b>Cash (Total)</b>			<b>Accounts Payable (or Merchandise)</b>		
(In Bank \$ _____)			Notes & Accts Payable for Merchandise		
<b>Accounts Receivable</b>			Owe to _____		
(At 60 Days Past Due \$ _____)			Bank _____		
(Amt Sold or Pledged \$ _____)			(When Due _____ Secured) (Unsecured)		
<b>Notes and Trade Acceptances Receivable</b>			Income Taxes Acc used		
(Amt Sold or Pledged \$ _____)			Other Taxes, including Sales Taxes Acc used		
<b>Merchandise Inventory</b> at on Consignment or Conditional Sale of L. & C. Market which ever a owe _____			Interest Accrued		
(Amount Pledged \$ _____)			Rental Payroll, etc. A. ed.		
<b>Other Current Assets (If any) be _____</b>			Payables to Partne's Related _____		
<b>TOTAL CURRENT ASSET</b>			<b>TOTAL CURRENT LIABILITIES</b>		
Land and Buildings [Appraised Value]			Mortgage on Land and Buildings		
Merchandise, Fixtures and Equipment [Appraised Value]			Capital Mortgag on Mds or Equipment		
Due from Others or Non Customers			Lens on Mds or Equipment		
Other Assets (Describe)			Other Liabilities, to Cu. & Co. (Describe)		
<b>TOTAL ASSET</b>			<b>TOTAL LIABILITIES</b>		
<b>BE SURE TO ANSWER ALL THESE QUESTIONS</b>					
Amount you do _____ as endorser W/ books of Account do you keep?				IF INSURANCE CARLD	
Amount you have _____ as of latest inventory				For Merchandise \$ _____	
Sales \$ _____ Inc. _____				Furn. & Fixt. \$ _____	
Profit \$ _____ Inc. _____				Bldng. \$ _____	
Am. of re. _____ in conn. with rent \$ _____				Extended Coverage \$ _____	
A. c. n. c. e. en. h. l. _____				U & O \$ _____	
Le. etate \$ _____				Liability Gen. al. \$ _____	
Ar. r. v. m. p. u. d. _____				Auto & Truck \$ _____	
cond. n. s. \$ _____				Life & Health n. B. ess. \$ _____	
cond. on sale or _____					
<b>RELY FROM THE FOLLOWING FIVE</b>					
NAME		RE. LO	AMOUNT TOWARD		
_____ _____ _____ _____ _____		_____ _____ _____ _____ _____	_____ _____ _____ _____ _____		

The statement above and on the back of this form has been made to be the truth, good both the man and woman in law, and is to my knowledge, to all its details complete and true, and that I disclose to you, et al, state of my bus. has no condition on the day of \_\_\_\_\_, 194 \_\_\_\_\_. Since there has been no material change in my financial condition, and if any such change takes place I will let you take note, and such note is given. On the 1st day of April, 1944, this is a continuing statement. The figures submitted are not estimated. They have been taken from my books and physical inventory, when as on date shown.

Name of Individual or Firm \_\_\_\_\_

If Partnership Name Partners \_\_\_\_\_

Corporate Officers \_\_\_\_\_

How long established \_\_\_\_\_

Date of Signing Statement \_\_\_\_\_ Street \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_

Witness \_\_\_\_\_ Residen. Address \_\_\_\_\_ Sgd by \_\_\_\_\_ Title \_\_\_\_\_

Fig. 3.—Statement Form Approved by National Association of Credit Men.

**NO ENVELOPE IS REQUIRED**  
**JUST FOLD, STAMP AND MAIL**

**FINANCIAL STATEMENT**

Statement Form Suggested by  
Federal Reserve Bank of New York  
**CORPORATION**  
(Short Form)

NAME \_\_\_\_\_

BUSINESS \_\_\_\_\_

TO \_\_\_\_\_

We make the following statement of all the assets and liabilities of this corporation at the close of business on the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_\_, and give other material information for the purpose of obtaining advances on notes and bills bearing our signature or endorsement, and for obtaining credit generally upon present and future applications  
**(PLEASE COMPLETE ALL SCHEDULES AND FILL IN ALL BLANKS. INSERT NONE IF APPROPRIATE.)**

ASSETS		LIABILITIES	
Cash	\$	Notes Payable to Banks	\$
On hand and unconverted in banks		Taxes Payable to Trade Creditors	
Notes Receivable from Customers		Notes Payable to Others	
Good and readily collectable		Less Taxes and Expenses	
Accounts Receivable from Customers		Loans on Life Insurance	
Current and collectable		Accounts Payable	
Merchandise		Due to Officers, Stockholders, Employees	
Life Insurance, Cash Surrender Value	\$	Due to Subsidiaries and Affiliates	
Without deducting losses		Taxes and Assessments	
Securities, Readily Marketable		Mortgage and Bonded Debt	
Stocks, bonds etc. at present selling value		Less Taxes and Expenses	
Less taxes deducted above at end of year	\$	Accrued Liabilities	
(Item re above other current assets)		Total Current Liabilities	\$
<b>Total Current Assets</b>	\$	Real Estate Mortgages Payable	
Land and Buildings		Due at Date of Sale	
Less taxes deducted on notes or at end of year	\$	Less Taxes and Expenses	
Machinery, Equipment, Furniture, Fixtures etc.		Total Liabilities	\$
Less taxes deducted above at end of year	\$	Reserve for Depreciation	
Accounts and Notes Receivable		Capital Stock	
From customers slow or doubtful of collection		Surplus	
Investments in Subsidiaries and Affiliates		Total Liabilities and Net Worth	\$
Net Realizing from Assets and Liabilities		STATEMENT OF PROFIT & LOSS for period beginning	
Due from Subsidiaries and Affiliates		Inventory Beginning of Period	\$
Due from Officers, Stockholders, Employees		Net Purchases	\$
Less taxes deducted above at end of year	\$	Operating Expenses	
<b>Total Assets</b>	\$	Officers' Compensation	
<b>STATEMENT OF PROFIT &amp; LOSS for period beginning</b>		Bal. Debits Charged Off	
Inventory Beginning of Period	\$	Depreciation on Charged Off	
Net Purchases	\$	Other Administrative Selling & Gen'l Exps.	
Operating Expenses		Reserves Created	
Officers' Compensation		Net Profit	\$
Bal. Debits Charged Off		<b>Final</b>	\$
Depreciation on Charged Off		<b>FRECONCILIATION OF FARMED SURPLUS for period beginning</b>	
Other Administrative Selling & Gen'l Exps.		Earned Surplus Beginning of Period	\$
Reserves Created		Deduct less from Farmed Surplus (Item re below)	\$
Net Profit	\$	All costs Farmed Surplus (Item re below)	\$
<b>Total</b>	\$	Total Deductions	
Net Surplus Change		Less taxes	
Farmed Surplus End of Period		Constituted Capital	\$

**Fig. 4A.—Statement Form Suggested by Federal Reserve Bank of New York for Corporation (short form).**

## (CONTINUED FROM OTHER SIDE)

**Contingent Liabilities and Commitments.** This corporation has no contingent liabilities or commitments outstanding against it, except as follows: Notes and Accounts Receivable, Trade Acceptances, Conditional Sales Contracts, etc., discounted, or sold with recourse \$ . . . . . on Mortgage Bonds \$ . . . . . in connection with Law Suits, including Torts, Injuries, etc. \$ . . . . . in connection with Leases \$ . . . . . claim for Taxes \$ . . . . . Commitments to

Buy \$	Commitments to Sell \$	Other (describe) . . . . .
Land and Buildings	Description and Location of Each Parcel	Estimated Present Value \$
		Assessed Value \$
		Amount of Fire Insurance \$
		Amount of Mortgages \$
		Years Assessable by Manager Interest Due and Unpaid \$

**Title to Real Estate.** The legal and equitable title to all the real estate listed in this statement is solely in the name of the undersigned corporation, except as follows:

<b>Notes Receivable (from Customers).</b> Considered collectable within 90 days \$ . . . . . of slow or doubtful collectability \$ . . . . .	<b>Selling terms</b> . . . . .
\$ . . . . . pledged or discounted \$ . . . . .	Purchasing terms . . . . .
<b>Accounts Receivable (from Customers).</b> Past due, but less than 90 days \$ . . . . . past due more than 90 days \$ . . . . .	<b>Maximum and Minimum Liabilities (during last fiscal year)</b> . . . . .
\$ . . . . . considered of doubtful collectability \$ . . . . .	Maximum of \$ . . . . . on . . . . . 19
accounts assigned, pledged, hypothecated \$ . . . . .	Minimum of \$ . . . . . on . . . . . 19
<b>Merchandise.</b> Date of last physical inventory	<b>Life Insurance.</b> On merchandise \$ . . . . . on machinery, . . . . .
Basis of valuation	etc. furniture fixtures etc \$ . . . . .
Raw materials \$ . . . . . in process \$ . . . . .	<b>Health Insurance.</b> Automobile property damage \$ . . . . .
In shop goods \$ . . . . . supplies \$ . . . . .	personal liability \$ . . . . . General public liability \$ . . . . .
Slow moving or obsolete go. gs \$ . . . . .	Automobiles owned or operated without insurance . . . . .
on consignment \$ . . . . . with assignment to others \$ . . . . .	<b>Moving, Lifting, etc.</b> Description of all property, including current asset, pledged as security to mortgages or covered by liens, not disclosed elsewhere in statement . . . . .
\$ . . . . . Merchandise on hand or in transit or otherwise held not in trade balance \$ . . . . . We are under contract to buy merchandise in the amount of \$ . . . . . which goods are with \$ . . . . . at present market prices	<b>Accounting Information.</b> Frequency of audits . . . . .
<b>Life Insurance on Officers &amp; Benefit of Company.</b> \$ . . . . .	Name of outside auditor . . . . .
<b>Names of Insure</b>	Date of last audit . . . . .
<b>Securities (Stocks, Bonds, etc.).</b> Description of each investment and whether readily marketable at stated values	<b>Settlement of Judgments and Other Legal Actions.</b> Description of all such ending outstanding or remaining unpledged against this corporation . . . . .

Registered in name of

**Notes Payable.** Description of security given

**Accounts Payable.** Fast \$ . . . . .

**Deferred Liabilities (Bonds, etc.).** Description of security given

**Interest rate.** % over \$ . . . . .

**Subsidiary and Affiliate Companies and Interest.** There are

**Officers and Directors.**

Name	Title	Amount	Common	Preferred	Number of Shares Owned
		\$ . . . . .			

**Pledge Assignment and Transfer of Title of Assets.** A certificate of title is attached hereto and exhibits in this financial statement, name of the asset(s) to be assigned, date of assignment, and the date at which the title thereto has been transferred, except as noted in this financial statement. If the date of assignment has been omitted, the date of assignment is the date of record as signed or hypothecated, and has the title thereto be transferred, except as follows:

We the undersigned hereby certify that the foregoing statement of assets and liabilities and the statement of profit and loss and reconciliation of surplus are taken from the books of this corporation and that they are in accordance with said books and that they and all other statements printed or written on the two sides of this sheet have been carefully read and are true and give a correct showing of the financial condition of this corporation at the time of the balance sheet value contained therein. Where a difference is specifically noted IN THE EVENT OF ANY MATERIAL CHANGE IN THE FINANCIAL CONDITION OF THIS CORPORATION, WE AGREE TO NOTIFY SAID BANK IMMEDIATELY IN WRITING.

Signed this . . . . . day of . . . . . 19 . . . . . Signature . . . . .

By . . . . . (Name and Official Title) . . . . .

Attach separate schedules whenever space on this form is insufficient.

Identify each schedule as being part of this financial statement date and sign each schedule same as this form.

Fig. 4B.—Statement Form Continued (Page 2).

## **FINANCIAL STATEMENT**

NAME  
BUSINESS  
TO

We make the following statement of all the assets and liabilities of this corporation at the close of business on the day of 19\_\_\_\_\_, and give other material information for the purpose of obtaining advances on notes and bills bearing our signature or endorsement and for obtaining credit generally upon present and future applications.

(PLEASE COMPLETE ALL SCHEDULES AND FILL IN ALL BLANKS)

ASSETS		LIABILITIES	
Cash	\$	Notes Payable to Banks Unsecured	\$
On hand and in safe depts in banks		Notes Payable to Banks Secured	
Notes Receivable Not Discounted		Customer Notes Discounted	
From customers & others who do not discount		Banks and Finance Companies	
Notes Receivable Discounted		Loans on Life Insurance	
With banks finance companies etc			
Accounts Receivable (Current & older table)		Notes Payable for Mach & Equip etc	
From customers except sales on credit		Notes Payable for Merchandise	
Due From Subsidiaries & Affiliates			
Co-ventures or joint ventures with other firms			
Merchandise — Raw Materials			
Supplies		Accounts Payable	
Goods in Process		Due to Subsidiaries & Affiliates	
Finished		Due to Subsidiaries & Affiliates	
Life Insurance	Cash Surrende	Due to Officers Stockholder Employees	
(Do not deduct fees)	Value	Accrued Liabilities	
Securities Pending Marketable		Wages, Salaries, Rent, etc.	
Stocks bonds etc	Stocks Bonds etc	Mortgage and Ho. Inv. Debt	
		Interest and Dividends	
		Taxes and Assessments	
Total Current Assets		Total Current Liabilities	
Land and Buildings Used in Business		Real Estate Mortgages Payable	
Before depreciation		Due	
Land and Buildings Not Used in Business		Bank Deb. Due	
Before depreciation			
Buildings & Equipment		Other Liabilities	
Before depreciation		Due	
Furniture and Fixtures		Total Liabilities	
Before depreciation		Due at Maturity — Buil	
Trucks Autos etc		Mach & Equip	
Before depreciation		Furn & Fixtures	
Investments in Subsidiaries & Affiliates		Trucks etc	
Not holding an ownership interest			
Due From Subsidiaries & Affiliates			
Loans to Officers Stockholders and Employees			
Due From Officers Stockholders and Employees			
Accounts & Notes Receivable		I Preferred Stock	
60 day demand notes		Convertible Preferred	
Professional Expenses		Common Stock	
Taxes Insurance			
Patents, Des. Letters Copyrights etc		Unearned or Capital Surplus	
Patents		Earned Surplus	
Good Will			
Total Assets	\$	Total Liabilities & Net Worth	\$

**Fig. 5A.—Statement Form Suggested by Federal Reserve Bank of New York for Corporation (long form).**

**STATEMENT OF PROFIT & LOSS - RECONCILIATION OF NET WORTH**

For Period Beginning.

, 19

, and Ending

, 19

.

Gross Sales—To Subsidiaries and Affiliates —To Others	\$ _____
Less Returns and Allowances (Except cash discounts)	\$ _____
<b>NET SALES</b>	\$ _____
Inventory Beginning of Period	\$ _____
Purchases During Period (Before cash discounts)	\$ _____
Direct Labor	\$ _____
Other Costs, as Itemized Below (List separately all large ledger amounts)	\$ _____
   	\$ _____
Total	\$ _____
Less Inventory End of Period	\$ _____
Cost of Goods Sold	\$ _____
<b>GROSS PROFIT</b>	\$ _____
Administrative & General Expenses	\$ _____
Officers Salaries	\$ _____
Other Salaries	\$ _____
Interest	\$ _____
H. Debts (List separately below the large accounts)	\$ _____
   	\$ _____
Depreciation (No applicable elsewhere)	\$ _____
Total	\$ _____
Total Administrative General and Selling Expenses	\$ _____
<b>NET OPERATING PROFIT</b>	\$ _____
Other Income	\$ _____
Cash D'accounts Rec'd (List other items)	\$ _____
   	\$ _____
Total Other Income	\$ _____
Net Addition or Deduction for Other Income and Expense	\$ _____
<b>NET INCOME FOR PERIOD</b>	\$ _____
Earned Surplus Beginning of Period	\$ _____
Deductions from Surplus It must be =	\$ _____
   	\$ _____
Total Additions	\$ _____
Total Deductions	\$ _____
Net Surplus Change	\$ _____
Earned Surplus End of Period	\$ _____

**Fig. 5B.—Long Statement Form Continued (Page 2).**

**SUPPLEMENTARY SCHEDULES AND INFORMATION**

**Important:** Unless otherwise specified the following schedules reflect status as of balance sheet date.  
(Whatever schedule space is insufficient, submit separate schedules containing same details.)

#### Banking Relations (A List of all bank accounts)

Borrowing Requirements (A list of all bank accounts)			
Name and Location of Bank	Cash Balance	Amount of Loan	How Endorsed, Guaranteed or Secured

**Accounts Receivable** (including notes due from officers, stockholders and employees) **Notes & Trade Acceptances Receivable**

<b>NEXT DUE</b> —(According to original terms) \$	<b>Original Notes &amp; T/A's, not renewed</b> \$
<b>PAST DUE</b> —Less than 3 months	<b>Renewed Notes &amp; T/A's</b>
—From 3 to 6 months	<b>Past due and protested Notes &amp; T/A's</b>
—More than 6 months	<b>Total Notes &amp; T/A's Receivable</b>
<b>Total Accounts Receivable</b>	<b>Less Reserve for Doubtful</b>
<b>Less Reserve for Doubtful Accounts</b>	<b>Notes &amp; T/A's Receivable—Net</b>
<b>Accounts Receivable—Net Book Amount</b>	<b>Amount considered of slow collection</b>
<b>Amount of Accounts considered doubtful</b>	<b>Amount considered of doubtful collect on</b>
<b>Amt. of Accts pledged hypothecated etc</b>	<b>Amt of Notes &amp; T/A's discounted pledged etc.</b>

<b>Selling Terms</b>	<b>Basis of valuation</b>	<b>Amount of fire insurance \$</b>
Date of last physical inventory	Amount of slow moving merchandise \$	, of obsolet
merchandise \$	of which \$ is included in the	
balance sheet	Amount of merchandise pledged \$	out on consignment to others \$
During the year the largest and smallest	HI HEI	F in the months) (LOWEST
amount of merchandise on hand is in	Raw Mat	Sal

### **the months**

**Securities Owned** (With those representing ADRs listed separately) designated by **A**, and those considered **Readily Marketable** by **R.M.**

- 1 -

Location and Description	Age and Condition	Cost of the Improvements	Assumed Value	Fire Insurance	Estimated Present Value
1					

四

The legal and equitable title to all the real estate hereinabove is held in the name of the corporation except as follows:

### Accounts and Notes Payable

**Amount past due, or renewed** \$  
**Purchase terms**

Insurance

**Fire Insurance on machinery fixtures etc** \$ \_\_\_\_\_  
**Automobile Liability Insurance** \_\_\_\_\_  
**General Public Liability Insurance** \_\_\_\_\_

Continued on next page

**Fig. 5C.—Long Statement Form Continued (Page 3).**

**Continued from preceding page**

**Maximum and Minimum Current Liabilities** During the last fiscal year current liabilities were at a maximum of \$  
on 19, and a minimum of \$ on 19.

**Contingent Liabilities** This corporation has no contingent liabilities except as follows on Notes and Accounts Receivable, Conditional Sales Contracts etc discounted or sold with recourse to Banks and Finance Companies \$

as Guarantor \$ as Accommodation Indorsee \$ on Future Sales Contracts \$  
o. Future Purchase Contracts \$ , in connection with Leases \$ in respect to Lawsuits, including  
Torts Injuries etc \$ Patent, Copyright and Trademark Claims \$ , on Claims for  
Federal Taxes \$ Other (describe) .

**Federal Taxes 3**      **Other (describ)**

Suits Judgments and Other Legal Actions There are outstanding or pending against this corporation no suits, judgments or other legal actions and to the best of the knowledge of the officers and employees no legal actions are to be started against this corporation except as follows:

**Pledge Assignment and Transfer of Title of Assets.** As of the date of the statement of assets and liabilities included in this financial statement, none of the assets of the corporation as listed herein were pledged, assigned, hypothecated, nor had the title thereto been transferred, except as noted in the schedules of this financial statement, and none of the assets of this corporation have been since that date pledged, assigned, or hypothecated, nor has the title thereto been transferred as follows:

**Road Issues** (Describe each issue separately) Description of assets on which a lien, including any current assets covered by a  
lien, is held.

#### **Summary of indenture provisions, including risk or fund requirements**

There are no defaults in connection with any of the provisions of the indenture(s), except as follows:

Name and address of Trustee(s)

### **Preferred Stock Summary of provisions**

#### **Voting powers of registered stockholders**

**Amount of preferred stock dividends accumulated and unpaid \$**

**Capital Stock** Number of shares of each class (1) authorized and (2) outstanding

**Incorporation** Name of State or place whose laws the corporation is organized

#### Observe and Infer

Officers and Directors	Number of Shares Owned				
	Name	Title	Annual Compensation	Common	Preferred

**Subsidiaries and Affiliated Companies and Interests**      **Names and addresses**      **nature of relationship and how accounts are handled**

Certified Public Accountant This corporation employs

**Name and address**

Certified Public Accountant who audits our books every

, and made last year.

REPORT NO. 87

We hereby certify that the foregoing figures comprising the statement of assets and liabilities and the statement of profit and loss and reconciliation of surplus are taken from the books of this corporation and that they are in accordance with generally accepted books and that they and all other statements printed or written on the four pages of this form have been carefully read and are true and give a correct showing of the financial condition of the corporation as of the date shown in the paragraph preceding the statement of assets and liabilities on the first page except where a different date is specifically noted. IN THE EVENT OF ANY MATERIAL CHANGE IN THE FINANCIAL CONDITION OF THIS CORPORATION WE AGREE TO NOTIFY SAID BANK IMMEDIATELY IN WRITING.

Signed this \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_ Signature \_\_\_\_\_

By

Names and Official Titles

Fig. 5D.—Long Statement Form Continued (Page 4)

FORM NO. 3

**CORPORATION  
FINANCIAL STATEMENT  
(LONG FORM)**

FORM RECOMMENDED AND APPROVED BY  
BANK MANAGEMENT COMMISSION  
AMERICAN BANKERS ASSOCIATION

NAME \_\_\_\_\_ (NAME OF BANK)  
ADDRESS \_\_\_\_\_ (DATE)

TO \_\_\_\_\_ (NAME OF BANK)

FOR THE PURPOSE OF OBTAINING ADVANCES FROM TIME TO TIME ON BILL OF LADING AND OTHER COMMERCIAL PAPER SIGNED OR ENDORSED BY THE UNDER-SIGNED AND OF OBTAINING CREDIT GENERALLY THE UNDERSIGNED MAKES THE FOLLOWING STATEMENT OF THE FINANCIAL CONDITION AS OF THE CLOSE OF BUSINESS ON THE \_\_\_\_\_ DAY OF \_\_\_\_\_ 19\_\_\_\_\_, AND CERTIFIES TO THE ABOVE NAMED BANK THAT THE INFORMATION HEREINAFTER SET FORTH IS IN ALL RESPECTS TRUE, ACCURATE AND COMPLETE AND CORRECTLY REFLECTS THE FINANCIAL CONDITION OF THE UNDERSIGNED ON THE DATE AFOREMENTIONED.

(FILL ALL BLANKS WRITING NO OR NONE WHERE NECESSARY TO COMPLETE INFORMATION)

ASSETS		LIABILITIES	
CASH—ON HAND \$	IN BANK \$	NOTES PAYABLE	
(SEE SCHEDULE)		TO BANK	
NOTES RECEIVABLE OF CUSTOMERS		FOR MERCHANDISE	
ACCOUNTS RECEIVABLE OF CUSTOMERS		FOR MACHINERY EQUIPMENT ETC	
(SEE SCHEDULE)		TO OTHERS FOR BORROWED MONEY	
MERCHANDISE—FINISHED (SEE SCHEDULE)	4	TRADE OR BANK ACCEPTANCES PAYABLE	
—IN PROCESS		ACCOUNTS PAYABLE—NOT DUE	
—RAW		—PAST DUE	
SECURITIES OWNED (OTHER THAN IN SUBSIDIARIES AND AFFILIATES) (SEE SCHEDULE)		DUE TO SUBSIDIARIES AND AFFILIATES	
OTHER CURRENT ASSETS (SEE SCHEDULE)		DUE TO DIRECTORS, OFFICERS AND EMPLOYEES	
TOTAL CURRENT ASSETS		DIVIDENDS DECLARED BUT UNPAID	
INVESTMENTS IN SUBSIDIARIES AND AFFILIATES (EXCLUDING LOANS, ADVANCES, ETC.) (SEE SCHEDULE)		RESERVED FOR AND ACCRUED TAXES	
DUES FROM SUBSIDIARIES AND AFFILIATES (SEE SCHEDULE)		ACCruED EXPENSES WAGES INTEREST INSURANCE	
BUS. FROM STOCKHOLDERS		CHATTEL MORTGAGES } DUE WITHIN 1 YEAR	
BUS. FROM OFFICERS AND EMPLOYEES		MORTGAGES }	
LIFE INSURANCE—CASA SURRENDER VALUE (IN AND OUTSTANDING) (SEE SCHEDULE)		BONDED DEBT	
GOODWILL AND TRADEMARKS		OTHER CURRENT LIABILITIES (SEE SCHEDULE)	
COPYRIGHTS, DIES, PATENTS ETC			
LAND USED IN BUSINESS (SEE SCHEDULE)			
BUILDINGS—USED IN BUSINESS	BEFORE DEPRECIATION	TOTAL CURRENT LIABILITIES	
MACHINERY AND EQUIPMENT	RESERVES	CHATTEL MORTGAGES } DUE AFTER 1 YEAR	
FURNITURE AND FIXTURES		MORTGAGES }	
TRUCKS, AUTOS, ETC		BONDED DEBT (SEE SCHEDULE)	
HOME, WAGONS ETC		LOANS ON LIFE INSURANCE	
LAND AND BUILDINGS NOT USED IN BUSINESS (SEE SCHEDULE)		OTHER LIABILITIES (SEE SCHEDULE)	
PREPAID EXPENSES—INTEREST, INSURANCE, ETC			
OTHER ASSETS (SEE SCHEDULE)			
TOTAL		TOTAL LIABILITIES	
RESERVES FOR DEPRELATION			
BUILDINGS			
MACHINERY AND EQUIPMENT			
FURNITURE AND FIXTURES			
TRUCKS, AUTOS ETC			
RESERVE FOR CONTINGENCIES			
OTHER RESERVES (SEE SCHEDULE)			
TOTAL RESERVES			
CAPITAL AND SURPLUS			
PREFERRED STOCK } (SEE SCHEDULE)			
COMMON STOCK } (SEE SCHEDULE)			
EARNED SURPLUS			
CAPITAL SURPLUS			
TOTAL			

(BE SURE ALL SCHEDULES ARE FILLED OUT)

**Fig. 6A.—Corporation Financial Statement Form (long form) Approved by Bank Management Commission of the American Bankers Association.**

<b>CONTINGENT LIABILITIES</b>		<b>SURETY OR FOR OTHERS ON NOTES RECEIVABLE OR CONTRACTS MAXIMUM LIABILITY FOR PROPOSED ADDITIONAL INCOME TAXES</b>
NOTES RECEIVABLE OR TRADE ACCEPTANCES, OR ORDERS DISCOUNTED OR SOLD	\$	
NOTES RECEIVABLE OR TRADE ACCEPTANCES PLEDGED OR ASSIGNED		
CUSTOMERS ACCOUNTS DISCOUNTED OR SOLD		<b>BONDS OR UNFINISHED CONTRACTS</b>
CUSTOMERS ACCOUNTS ASSIGNED OR PLEDGED ACCOMMODATION PAYMENT ENDORSEMENTS OR NOTES EXCHANGED WITH OTHERS		<b>PURCHASE COMMITMENTS OUTSTANDING</b>
		<b>LITIGATION IN PROCESS OR THREATENED</b>
		<b>OTHER CONTINGENT LIABILITIES</b>

## **STATEMENT OF PROFIT AND LOSS**

**FOR THE PERIOD BEGINNING** 19 **AND ENDING** 19

GROSS SALES				
LESS RETURN AND ALLOWANCES				
NET SALES				
COST OF GOODS SOLD				
TOTAL INVENTORIES AT BEGINNING OF PERIOD				
ADDED PURCHASES DURING PERIOD				
FOR MANUFACTURERS ONLY	DIRECT LABOR			
	DEPRECIATION			
	OTHER FACTORY OVERHEAD			
TOTAL				
DEDUCT TOTAL INVENTORIES AT CLOSE OF PERIOD				
GROSS PROFIT				
SELLING EXPENSES				
SALARIES				
COMMISSIONS				
TRAVELING				
ADVERTISING				
TOTAL				
ADMINISTRATIVE AND GENERAL EXPENSES				
OFFICERS' SALARIES				
OTHER SALARIES				
RENT				
NOTES AND ACCOUNTS CHARGED OFF				
DEPRECIATION				
(NOT APPLICABLE ELSEWHERE)				
TOTAL				
TOTAL ADMINISTRATIVE, GENERAL AND SELLING EXPENSES				
OPERATING PROFIT				
OTHER INCOME				
INVESTMENTS				
CASH DISCOUNTS RECEIVED				
RECOVERIES FROM NOTES AND ACCOUNTS PREVIOUSLY CHARGED OFF				
OTHER				
TOTAL				
OTHER EXPENSES				
INTEREST				
CASH DISCOUNTS GIVEN				
OTHER				
TOTAL				
NET PROFIT OR LOSS BEFORE INCOME TAXES				
A CREDIT TO FEDERAL INCOME TAXES				
ACCRUED STATE INCOME TAXES				
TOTAL				
NET PROFIT OR LOSS CARRIED TO SURPLUS				
AMOUNT OF DIVIDENDS DECLARED AND/OR PAID SINCE STATEMENT DATE				

#### **RECONCILIATION OF EARNED SURPLUS**

<b>EARNED SURPLUS AT CLOSE OF PREVIOUS FISCAL YEAR</b>	
<b>ADD NET PROFITS</b> <small>(FROM PROFIT &amp; LOSS STATEMENT)</small>	
<b>OTHER ADDITIONS (1 MILLE)</b>	
<hr/>	
<b>TOTAL ADDITIONS</b>	
<hr/>	
<b>LESS DIVIDENDS PAID</b>	
<b>CASH-PREFERRED RATE</b> %	
—COMMON RATE —	
<b>STOCK-PREFERRED RATE</b>	
—COMMON —	
<b>OTHER DEDUCTIONS (TAXES)</b>	
<hr/>	
<b>TOTAL DEDUCTION'S</b>	
<b>EARNS SURPLUS AT END OF PERIOD</b> <small>(CASH &amp; ETC.)</small>	

## **RECONCILIATION OF CAPITAL SURPLUS**

<u>CAPITAL SURPLUS AT CLOSE OF PREVIOUS FISCAL YEAR</u>	
<u>ADDITIONS (ITEMS)</u>	
<u>TOTAL ADDITIONS</u>	
<u>DEDUCTIONS</u>	
<u>MISSES</u>	
<u>TOTAL DEDUCTIONS</u>	
<u>CAPITAL SURPLUS AT END OF PERIOD (SEE BALANCE SHEET)</u>	

WAS AN AUDIT MADE? \_\_\_\_\_ NAME OF INDEPENDENT ACCOUNTANTS? \_\_\_\_\_  
THE FISCAL PERIOD OF THIS CORPORATION CLOSES ON THE \_\_\_\_\_ DAY OF \_\_\_\_\_

SARF ACCOUNTS				
NAME AND LOCATION OF SAVES	CASH BALANCE	CREDIT LINES	AMOUNT OF SAVES	ON WHAT BASIS? (ENDORSEMENTS, RECEIVABLES, COLLATERAL, ETC.)
\$	\$	\$	\$	

**Fig. 6B.—Corporation Form Continued (Page 2).**

<b>NOTES AND TRADE ACCEPTANCES RECEIVABLE</b> —Customers Only (excluding those from affiliates)		<b>ACCOUNTS RECEIVABLE</b> —Customers Only (excluding those from affiliates)					
NOT DUE		ACCOUNTS CHARGED WITHIN					
RENEWED		30 DAYS					
PAST DUE AND PROTESTED		31 TO 60 DAYS					
TOTAL NOTES AND TRADE ACCEPTANCES RECEIVABLE		61 TO 90 DAYS					
LESS RESERVE FOR DOUBTFUL		3 TO 6 MONTHS					
NOTES AND TRADE ACCEPTANCES RECEIVABLE—NET		OVER 6 MONTHS					
AMOUNT CONSIDERED OF SLOW COLLECTION		TOTAL ACCOUNTS RECEIVABLE					
AMOUNT CONSIDERED OF DOUBTFUL COLLECTION		LESS RESERVE FOR DOUBTFUL ACCOUNTS					
		ACCOUNTS RECEIVABLE—NET					
		AMOUNT OF ACCOUNTS CONSIDERED DOUBTFUL					
		SELLING TERMS					
<b>INVENTORY</b>							
MERCANDISE ON HAND		1 AMOUNT OF MERCANDISE PLEDGED					
— CONSIGNMENT TO OTHERS		2 IS MERCANDISE CONSIGNMENT TO YOU INCLUDED IN ASSETS?					
— IN TRANSIT		3 AT WHAT TIME OF YEAR IS INVENTORY HIGHEST? _____ LOWEST?					
TOTAL		4 AVERAGE AMOUNT OF INVENTORY					
LESS RESERVES (if any)		5 DOES INVENTORY REPRESENT PHYSICAL COUNT? WHEN TAKEN?					
TOTAL AS PER STATEMENT		6 DESCRIBE IN DETAIL THE BASIS OF VALUATION					
		7 STATE THE EXTENT OF ACCOUNTANTS VERIFICATION IF ANY.					
		8 GIVE DATE (OR DATES) ON WHICH INVENTORY IS TAKEN AND BOOKS ARE CLOSED					
<b>SECURITIES OWNED</b>							
FACE VALUE (BONDS) NUMBER OF SHARES (STOCK)	PERCENT OF TOTAL ISSUE	DESCRIPTION OF SECURITY	COST	PRESENT BOOK VALUE	MARKET VALUE	INCOME RECEIVED LAST YEAR	TO WHOM PLEDGED
			\$	\$	\$	\$	
ARE ALL SECURITIES OWNED REGISTERED IN THE NAME OF THE CORPORATION?							
<b>DEBT FROM SUBSIDIARIES AND AFFILIATES</b>							
NAME OF CONCERN	LOCATION	FOR ADVANCES	WHEN DUE	FOR WERKSHIPS	TERMS		
		\$		\$			
<b>REAL ESTATE</b>							
LOCATION AND DESCRIPTION		AGE	CONDITION	CONT'D IMPROVEMENTS	AVAILABLE VALUE		
1				1	\$		
2							
3							
4							
5							
FIRE INSURANCE	ESTIMATED PRESENT VALUE	MORTGAGE AMOUNT	MORTGAGEE	YEAR IN BUSINESS	YEARLY GROSS RENTAL INCOME		
10	\$	\$			\$		
11							
12							
13							
14							
15							
THE LEGAL AND EQUITABLE TITLE TO ALL THE REAL ESTATE LISTED ABOVE IS SOLIDLY IN THE CORPORATION'S NAME, EXCEPT AS FOLLOWS							
IF BOOK VALUE (BEFORE DEPRECIATION RESERVES) HAS DECREASED DURING THE YEAR, STATE REASON							
<b>LIFE INSURANCE</b>							
NAME OF PERSON INSURED	TYPE OF POLICY	FACE AMOUNT OF POLICY	TOTAL CASH RESERVE BOOK VALUE	TOTAL LOANS MADE ON POLICY	TO WHOM POLICY IS ASSIGNED		
		\$	\$	\$			

**Fig. 6C.—Corporation Form Continued (Page 3).**

**NON-RESIDENTS (describe each house separately)**

DESCRIPTION OF ASSETS (INCLUDING CURRENT ASSETS, IF ANY) PLEDGED TO SECURE BOND PAYMENT

**SUMMARY OF INCENTIVE PROVISIONS, INCLUDING SINKING FUND REQUIREMENTS.**

THERE ARE NO DATALETS IN CONNECTION WITH ANY OF THE PROVISIONS OF THE INCIDENT (S), EXCEPT AS FOLLOWS:

**NAME AND ADDRESS OF TRUSTEE.**

CAPITAL.COM

PREFERRED	% PAR VALUE \$	CUMULATIVE
AUTHORIZED	<input type="text"/>	
UNISSUED	<input type="text"/>	
OUTSTANDING	<input type="text"/>	
COMMON	PAR VALUE \$	
AUTHORIZED	<input type="text"/>	
UNISSUED	<input type="text"/>	
OUTSTANDING	<input type="text"/>	
COMMON NO PAR VALUE-SHARES OUTSTANDING		

**SUMMARY OF PRETENDER STOCK PROVISIONS**

---

**VOTING: POINTERS ON FEDERAL AND STOCKHOLDER**

**AMOUNT OF PREFERRED STOCK DIVIDENDS ACCUMULATED AND UNPAID**  
1. \_\_\_\_\_, REPRESENTING A PERIOD OF \_\_\_\_\_.

**HARMONY INTEGRATION** (combines both new and old technologies)

NAME AND ADDRESS OF INSURANCE COMPANY	TYPE OF POLICY	AMOUNT OF INSURANCE PERSONAL PROPERTY, ETC.	PROPERTY DAMAGE	EXPIRATION DATE
		\$	\$	

---

**OTHER INSURANCES**

FORM	CARRIER ON	NATURE	ADDRESS	ADDRESS
FIRE	MERCHANDISE			1
-	BUILDINGS			
-	MACHINERY AND EQUIPMENT			
-	FURNITURE AND FIXTURES			
-	TRUCKS, AUTOS, WAGONS, ETC.			
CRIME	ACCOUNTS AND NOTES RECEIVABLE			
USE AND OCCUPANCY				
PROPERTY BONDS				
OTHER				

OFFICE M

	NAME IN FULL	NUMBER OF MEMBERS ON PRESIDENTIAL COMMITTEE	ANNUAL CONTRIBUTION	ADDRESS
PRESIDENT			\$	
VICE-PRES.				
VICE-PRES.				
SECRETARY				
TREASURER				

SHOOTING

IN SUBMITTING THE FOREGOING STATEMENT THE UNDERSIGNED GUARANTEES ITS ACCURACY WITH THE INTENT THAT IT BE RELIED UPON BY THE APPLICABLE BANK IN EXTENDING CREDIT TO THE UNDERSIGNED AND WARRANTS THAT \_\_\_\_\_ HAS NOT KNOWINGLY WITHHELD ANY INFORMATION THAT MIGHT AFFECT \_\_\_\_\_.

CREDIT RISK, AND THE UNDERSIGNED EXPRESSLY AGREES TO NOTIFY IMMEDIATELY SAID BANK IN WRITING OF ANY MATERIAL CHANGE IN FINANCIAL CONDITION WHETHER APPLICATION FOR FURTHER CREDIT IS MADE OR NOT AND TO THE EXTENT OF EACH WRITTEN NOTICE IT IS EXPRESSLY AGREED THAT SAID BANK IN GRANTING NEW OR CONTINUING CREDIT MAY RELY ON THIS STATEMENT AS HAVING THE SAME FORCE AND EFFECT AS IF DELIVERED UPON THE DATE OF ADDITIONAL CREDIT IS REQUESTED OR EXISTING CREDIT IS TERMINATED OR CONTINUED.

ANSWER

**SIGNATURE OF CORPORATION**

OPTION

THIS \_\_\_\_\_ DAY OF \_\_\_\_\_ 19\_\_\_\_

— 1 —

**Fig. 6D.—Corporation Form Continued (Page 4).**

check of the reader against sales, may be all that can be obtained. With a record of former collections to show the rapidity with which such accounts had been liquidated in the past, a schedule showing the accounts not due and classifying accounts past due according to the length of time past due should be of value. Good accounts receivable with such a basis for estimating their collectibility ought to be of special assistance to a business seeking bank credit. Possibly in some cases a business resorting to a finance company (that is, lenders on pledged receivables) and paying a high rate of return might, with the presentation of sufficient data of this sort, be able to utilize the less costly credit of the banker.

The executive will also be interested in having a list of new customers. A list of old customers who have made no recent purchases might lead to a fruitful inquiry. Other facts about the customers' receivables that would be useful are the percentage of collection expense and the percentage of loss from bad debts.

**Inventories.** The questions most frequently asked about the inventories are made to determine (a) whether the value of the stock was obtained by actual physical count or merely by estimate, (b) the basis of valuation, (c) the average amount carried, and (d) whether any goods on hand are the property of others.<sup>2</sup> Thus, goods on consignment have to be watched for in some lines of business. In the automobile trade, cars may be held under trust receipts giving title to certain creditors—a device used to secure financing. In this line of business, a creditor might also ask for a division between new and second-hand car inventory.

Where the information is being made available for a skilled eye, a detailed schedule of the inventory will serve to bring out the nature of the goods held and their utility as a basis for credit. It is desirable, wherever possible, to watch for goods that are likely to be shopworn, out of date, in broken lots, or for other reasons difficult to sell. It may be possible to learn what policy the business pursues

<sup>2</sup> The need for disclosure of current market values where LIFO is employed has been suggested earlier. Another, and more unusual, example of hidden value is found in the inventories of old film previously written off by motion picture producers but useful for television. By valuing films released between 1933 and 1949 at a rough figure of \$80,000 each, one analyst found inventory values in excess of the market prices for the common stocks of some leading producers (1951). Resistance of theater owner customers and labor union restrictions were noted as obstacles to realizing such values.

in closing out old or seasonal goods. The special attention given to the two assets, receivables and inventories, is justified because they usually constitute the bulk of the current assets.

**Investments.** A detailed schedule of investments is of use in checking the value of that asset and should be available if the item is large enough to be important. In any case, the nature of these outside investments indicates something of the degree of conservatism of the management. The Federal Reserve Bank of New York in a communication to member banks on financial statements states:<sup>3</sup>

A detailed list is usually required, showing number of shares, name of company, type of security, etc. In the case of stocks and bonds listed on a recognized stock exchange, market value can be determined from this information; but if the statement includes the stock of local companies, a recent statement of each company and information as to the total number of shares outstanding should be furnished.

Three weaknesses may be encountered from time to time in this asset: the investments may be (1) of a speculative sort, such as stocks in enterprises that are in the promotion stage; (2) difficult to market, particularly where the securities are those of local enterprises; or (3) unprofitable, especially dangerous where in weak affiliated or subsidiary concerns, which may call for additional capital to save what has already been invested.

**Liens.** In examining the liabilities, the most likely error is the omission of any mention of liens, or pledged assets. Where any debts are secured by a lien on any of the assets, a question should bring out the amount of the secured debt and the particular assets that are pledged. The maker of the statement may be asked whether any of his accounts receivable or notes have been pledged or sold to banks, finance companies, or others, and for what amount. Inquiry should be made to ascertain whether receivables are ever pledged, because it is possible that a balance sheet might be made up at a season when there were no such borrowings. Creditors with no information except the statement made up at such a time would form a wrong impression of the situation. Where it is likely that purchases may be made on the installment plan, care should be taken to inquire if the full liability for unpaid installments has been properly included in the list of debts.

<sup>3</sup> Circular No. 1340, Jan. 19, 1934.

The credit man who is interested chiefly in debtors in a single city can frequently get the necessary information from some local credit agency. A credit investigator will examine the county clerk's records for recorded liens and will also find out whether there are any unpaid property taxes. Agencies interested in supplying credit information often put out a daily sheet that records such matters as court actions, judgments filed, mechanics' liens, mortgages filed and discharged, deeds, and conditional sales where the law requires filing. These keep one informed of sudden liabilities or liens that might change the status of the liabilities of local debtors.

**Other information about liabilities.** In some instances, the liabilities are unusually large or small because of the seasonal factor. If such conditions are treated as normal, the reading of the statement may lead to unsound conclusions. The months in which the accounts payable are at their maximum and minimum and the amounts at such times should be requested. (The effect of seasonal expansion of credit can be approximated along the lines suggested on page 70.) Concerns impressed with the desirability of showing a low debt and small inventory sometimes make unusual efforts to avoid all possible deliveries of incoming merchandise just before statement dates. Should the accounts payable appear unduly small after an allowance for the seasonal factor, and a possibility of a poor accounting exists, the question may be raised: Have all the accounts owing for goods that are now on hand been included under the caption "Accounts Payable"? Sometimes, as in the Federal Reserve bank form, questions may be asked as to any merchandise on hand or in transit not included in the balance sheet and as to purchase commitments and the present market value of such merchandise.

In the study of the funded or long-term indebtedness, the date or dates of maturity should be learned. The provisions for retirement of such debt may also be significant. If a sinking fund is required by the terms made at the time the debt was incurred, a check should be made to see if the fund has been properly provided.

**Insurance.** While the asset values are being scrutinized, it should not be forgotten that the insurance protection which safeguards them is also a matter of the first importance. It is customary to include a fire insurance policy among the papers that go with a real estate mortgage, for the protection of the mortgagee. Although the current creditors seldom have a lien on the inventory, it is important that

they be protected in case of fire loss. In the event of a serious fire, the inventory is worth no more to the creditors than the face of the policy that covers it. It is important, therefore, that the coverage be adequate. Inadequate insurance is sometimes regarded as a sign of possible inventory overvaluation.

In some few cases, large corporations provide their own insurance fund. This practice is called *self-insurance*. An amount is set up as a Reserve for Insurance (or Provision for losses under self-insurance), and sometimes cash is set aside and invested in a reserve fund. Self-insurance is a satisfactory substitute only where the properties of the company are numerous and so separated that a conflagration could not sweep a group. No single property should be of such considerable value in relation to the whole that its loss would seriously embarrass the company.

Some enterprises have protected themselves not only against the possible loss of their physical assets, but also against the contingency of the removal by death of persons vital to the organization's continued success. Life insurance may be taken out in favor of the business on the life of an officer or employee, a director, or an inventor whose loss would seriously weaken the business. In a few somewhat unusual cases, a debt has been provided for by taking an endowment insurance policy on the life of one or more of the particularly important persons in the organization. In case of a death, a fund is available to retire the debt; in case no death occurs and the debt runs till the end of the endowment period, the proceeds of the maturing insurance policy provide the necessary money. The credit of partnerships has been saved at times by life insurance payable to the business when the death of one of the partners might have seriously impaired credit standing.

Credit insurance provides indemnity for wholesalers, jobbers, and manufacturers against unusual losses caused by the failure of their customers to meet their obligations. The policy protects only against (1) losses that are above the so-called normal or expected loss, usually expressed as a percentage of gross sales; and (2) losses occurring when the credits have been extended to debtors with a proper credit rating and otherwise within the terms of the policy. The total liability of the credit insurance company may be limited to a certain amount, or it may be unlimited. Such protection gives an established value to the accounts receivable, with consequent protection to credi-

tors and investors if the company taking out the insurance always limits itself in the extension of credits to concerns properly rated for the line of credit granted.

Whether a concern should take out credit insurance is a question of whether self-insurance is wise or unwise at this point. Ordinarily, it will be cheaper to set up an allowance for bad debts and care for one's own losses. Only those business houses whose loss ratios are extremely variable, either because they sell to a very limited number of customers or because their customers are very susceptible to a period of business depression, will find their losses sufficiently unpredictable to warrant this type of insurance.\*

Special forms of insurance are also vital in caring for emergencies that might otherwise sweep a business into bankruptcy. In this class would fall employers' liability and workmen's compensation insurance, protecting against the claims of injured employees. Similarly, public liability protection will meet those claims that might arise in the form of a heavy judgment for damages, where injuries have been sustained in such a way as to make the business liable. Automobile insurance to cover public liability and property damage by cars used in the business, and fidelity bonds, where it is possible for unfaithful employees to abscond with large amounts, may be necessary. Adequate insurance from the creditors' point of view is protection against all those hazards which might suddenly remove asset values or create liabilities that would render the business insolvent.

**Hedges.** Closely allied to insurance is the "hedging" against fluctuations in the value of inventory in certain lines of business. "Hedges," or "future contracts," are possible for some textile mills and flour mills. Future contracts of this sort are to be had only in certain staple commodities, such as cotton, wheat, and corn, which are traded in on the exchanges. A mill using short staple cotton can engage, for example, in a speculative contract agreeing to sell cotton at a future date for a certain price at the same time that it buys cotton for manufacture. The price of the mill's product will fluctuate closely with the price of cotton, and any loss which might result from a downward price movement during the interval between the purchase of the cotton and the sale of the completed cloth would be approximately offset by the profit on the speculative "short" con-

\* Chapter 20 of R. P. Ettinger and D. E. Golieb, *op. cit.*, is devoted to a full discussion of credit insurance.

tract, and *vice versa*. If the cotton were but a minor element in the cost of producing the cloth, the hedge might not be used.<sup>5</sup>

**Contingent liabilities.** Insurance protects both creditors and owners against the loss of assets through hazards largely beyond the control of the management. The business itself may give rise to certain losses contingent upon the failure of others to meet their obligations. Inquiry should be made about contingent liabilities that may have been incurred by the concern's having acted as an indorser or guarantor of the paper of others, or having sold or discounted accounts or notes receivable or having assigned them with the indorsement or guaranty of the business. Businessmen on occasion indorse the paper of others as a matter of accommodation—a dangerous and generally an undesirable practice.

Where a note or acceptance of a customer has been disposed of, it is important to keep the contingent liability in sight until the item has matured. Contingent liability on discounted notes is particularly important in the case of houses engaged in exporting, which, after drawing on their foreign customers, discount the drafts. Some of these houses have been very seriously embarrassed when their contingent liabilities became actual.

In domestic trade, the case of H. B. Claflin Company has become almost classic in credit circles. The Claflin Company was a wholesale dry goods house, whose owner held a controlling interest in more than a score of retail houses. Notes from these retail houses were indorsed and discounted with banks throughout the country. Statements of the wholesale house were given out, but, as far as can be learned, no information was available with regard to the amount of contingent liability. More important, perhaps, was the difficulty of learning the condition of the retail stores. The statement shown on the next page was published January, 1913, showing an apparently good condition. When statements were prepared showing the status of the 23 companies that had executed notes later indorsed by H. B. Claflin

<sup>5</sup> Disagreement as to the merits of hedging do exist. General Baking Company, for example, does not follow the practice of hedging its flour and sugar purchases. The management believes that over a period of years the carrying charges on such operations offset the advantages except in periods of unusual price fluctuations. (Standard Statistics Annual) Report Card, Feb. 8, 1934.) The exceptional periods are usually regarded as sufficient justification for hedging. In flour milling, the customary practice is to hedge grain on hand, cash grain purchases, and unfilled flour sales orders in the market for grain futures.

Company, there were shown liabilities of \$34,089,758, of which \$31,157,710 were "notes discounted by H. B. Claflin Company," against total assets of \$14,822,865. A considerable portion of the notes did not represent merchandise purchases, but were evidently used to finance the purchase of the stores.

Contingent liability may arise from the indorsement or guaranty of other than short-term credit instruments. Corporations occasionally find it desirable to guarantee the bonds or the preferred stock of an allied or subsidiary corporation. In the case of some subsidiary companies, this device may be necessary to market the securities in question. This responsibility may be thought of for the first time when the evil day of default arrives.

#### H. B. CLAFLIN COMPANY

#### COMPARATIVE BALANCE SHEET

As of December 31

<i>Assets:</i>	1913	1912
Cash	\$ 2,794,562	\$ 2,417,603
Dividends	152,187	152,187
Bills Receivable	2,102,862	2,078,782
Open Accounts	2,009,289	1,803,366
Merchandise	5,821,749	6,717,407
Store Property	2,739,182	2,739,182
Stable	27,197	27,197
Horses, Trucks, etc	69,688	69,688
Total	\$15,716,715	\$16,005,411
<i>Liabilities</i>		
First Preferred Stock	\$ 2,600,300	\$ 2,600,300
Second Preferred Stock	2,570,600	2,570,600
Common Stock	3,829,100	3,829,100
Open Accounts	4,501,487	4,778,882
Foreign Exchange, etc	269,500	294,000
Surplus Reserve	1,683,474	1,647,336
Profits During Fall	262,254	285,194
Total	\$15,716,715	\$16,005,411

**Contracts and unfilled orders.** Long-term contracts sometimes are in effect guarantees and are important in a consideration of the future of the corporation. Thus an expensive office building may be erected by a realty corporation organized and owned by a parent company. The parent company may then make a long-term lease for all, or a considerable portion, of the building. This is, of course, a

contract of a definite nature, rather than a contingent liability. The assumed rental is as much a fixed charge as bond interest, but the balance sheet of the parent company may show no liability. The growing device of selling real property to a financial institution and at the same time leasing it for a long period of years has been mentioned previously.

Another type of contract to be looked for, most frequently in the case of the manufacturer, is the unfilled order. Accepted orders for goods are to be looked into carefully in times of violent price change, when they may result in either severe losses or considerable profits. Whether unfilled orders are a guarantee of continued production and profits must be decided in the light of conditions in each specific case. Contracts for military equipment may be delayed by slow tooling, made expensive to fulfill by changes in specifications, or be subject to the cancellation hazard. Or, they may insure a high rate of operations but offer distinctly less profit potential than the civilian goods ordinarily produced.

The converse situation is found in contracts made for the purchase of materials and supplies. Whenever prices rise for any considerable time, there are likely to be overzealous persons who will tie themselves up with contracts that result in losses in later price reactions.

**Sales analysis.** Just as the study of the balance sheet may be supplemented, so there are possibilities for supplementing the income statement. Management can scrutinize sales and operations by branches, departments, geographical divisions, salesmen and kinds of product. The object of such study is to discover weaknesses that may be eliminated. Unprofitable departments or lines of goods, except where special circumstances exist, should either be made to pay or be dropped. Some salesmen will be devoting their efforts to the sale of lines where there is little or no profit unless the profitability of their orders is watched. Where the salesman is a factor in the matter of credit granting, the collection expense and bad debts loss on his sales are of interest. Analysis of this sort is less costly and easier to obtain than formerly, because of the use of mechanical devices for calculation and tabulation.

The outside analyst can also develop pertinent information.<sup>6</sup> He

<sup>6</sup> In addition to the annual reports and prospectuses for new issues, valuable background information may be had from financial and trade publications. For example, see articles on steel companies in *Barron's*, a financial weekly on

will be concerned at overconcentration and dependence upon a few customers. He may discover devotion to relatively less profitable fields. A large steel company may be handicapped by failure to develop mills supplying the more popular forms of metal. A textile mill may not keep abreast of changing materials and styles. Another concern may be in the forefront of research and new product development.

**Production costs.** The proper analysis of production costs is another auxiliary to the statement of earnings which is normally available only to the management. Production is essentially of two sorts:

1. Where it consists of a single uniform product.
2. Where there is a diversity of product, owing to differences in size, model, style, or nature.

For production of the first class, an analysis of costs is relatively simple. By dividing each figure of the profit and loss statement by the number of units sold, a second column of figures may be had with the data for the period on a "per unit of product sold" basis. The selling price, cost of goods sold, and various expenses are stated on a per unit basis. When a supplementary schedule is made up stating production costs, the per unit cost of production may be had in a similar manner, in detail, for each item of expense. The resulting per unit figures are in a form that makes them readily comparable with data for other concerns or with the experience of the same plant in preceding periods. In the manner described, "per ton of coal" figures might be prepared for a coal mine or "per yard of cloth" figures for a textile mill producing one uniform grade of duck or sheeting.

A more difficult problem arises when there is a variety of products requiring the division of various indirect expenses among them. A producer of a variety of rubber specialties, a manufacturer of machines or castings of different sorts, or a printer taking jobs that are almost infinitely various, each has this problem. The raw material and labor directly applied to it may be kept account of; but how

United States Steel Corporation (May 9, 1949, p. 32), Youngstown Sheet and Tube Company (July 9, 1949, p. 32), and Crucible Steel Company of America (October 24, 1949, p. 35). Trade associations often publish valuable background information, such as the *Cement and Concrete Reference Book* of the Portland Cement Association, Chicago, Ill., and the *Bituminous Coal Annual* of the Bituminous Coal Institute, Washington, D. C.

shall the indirect expenses or overhead, such as depreciation of machinery, light and power, rent, and indirect labor, such as janitor service or superintendence, be divided among the several jobs? The work of correctly distributing these indirect expenses is the central problem of cost accounting. This kind of accounting is distinct from but supplementary to general accounting, sometimes called *financial accounting*, from which the ordinary financial statements discussed in this book are prepared. Cost accounting should also be distinguished from cost finding, which is done by estimate—often expertly arrived at by engineers and factory men—but not based on detailed cost accounts that definitely distribute all the expenses of production over the products of the period.

Cost accounting is a subject beyond the scope of this work, but it is likely to be vital to the executive aiming to secure profitable results. The absence or improper keeping of cost records may explain a concern's poor profits or constitute a serious source of weakness. Companies have lost profitable business by overestimating certain costs and demanding excessive prices for certain products and at the same time have taken other business that inadequate records failed to show as unprofitable. Where business of both sorts is obtained and the results mingled, the actual situation may be obscured until alert competitors have acquired the profitable lines and only the unprofitable business remains.

**Selling and administrative expenses.** An effective analysis of selling and administrative expenses may be as fruitful as a study of production costs. It is being realized that these expenses can be allocated just as production costs are. The marketing of some articles or lines of product will entail greater effort and expense, which is just as significant in profit and loss as is the greater production cost of some articles. A salad dressing will cost more to market than sugar, a newly patented article more than a well-known standard article. The management must consider the cost of manufacturing as but one element in a series of costs that are necessary to put the product in the hands of the customer at the time and the place that economic demand exists. Any attempt to go deeply into the subject would involve the whole field of cost accounting, which is outside the province of this book. A study of the principles that operate in this field will be found of general value to the analyst who has the opportunity to make such a study.

**Business history or "antecedents."** In addition to the strictly financial information, a report on a business should contain historical information not only about the business but also about the men who manage and control it. Finances will reflect the ability, the temperament, and the integrity of the persons behind the business. A mercantile agency reporting on a business will record past failures and fire losses not only of the business unit but of the owners as well. Such facts are sought because of the frequency of fraudulent or swindling failures and of fires deliberately set in order to conceal fraud or to rob the insurance company. People who have undesirable antecedents of this sort usually refuse to make statements regarding their previous record.

Other facts, such as changes in the ownership, management, and form of organization will be given. Questions may be asked to determine the experience and probable qualifications of the controlling parties. In the case of a sole proprietor or of partners, inquiries may be made as to age, length of service with the business, and previous experience. Similarly, in a corporation, the record of the chief officers is examined and the identity of controlling stockholders looked into. Sometimes the social and outside activities of these parties are checked to explain heavy withdrawals by the proprietors or an overgenerous dividend policy.

**Priorities, allocations, and defense.** During a period of war or active defense preparations, repercussions upon the particular business are significant in the analysis of financial outlook. The whole near-term future of a concern may depend upon its ability to obtain necessary priority for, or allocation of, essential raw materials to conduct operations. For a concern that is indebted, inability to continue operations may spell bankruptcy.

Loans to concerns that are producing for defense purposes fall in a distinct category and require special analysis. The lender must know whether the prospective borrower (1) has a knowledge of processes and methods, (2) has ability to make accurate cost estimates, (3) has suitable facilities and labor supply, (4) can obtain needed materials with sufficient promptness, and (5) can arrange satisfactory subcontracts where necessary. Such considerations may radically alter a banker's estimate of a former borrower and make reliance upon past balance sheets and income accounts extremely dangerous.

**Independent audits.** For the purpose of insuring reliable statements, creditors and investors seek outside verification of the financial statements.<sup>7</sup> This work belongs to the auditor, or public accountant, who, because of his training and independent position, is expected to see that correct principles are employed and honest results shown. The usefulness of statements may be impaired by the presence of terms that are vague in meaning or too technical to be understood by the general reader. The auditor should remember that his work is not serving his client properly if the element of clearness has been neglected.

The fact that the auditor has done his work is shown by his certificate attached to his report. If the report is published, the certificate will generally be given with the statements. If it is known that an audit has been made, but only an uncertified report is published, the reason should be sought.

The American Institute of Accountants states that experience has evolved and the profession has generally adopted the following form of certificate where a short, unqualified form is appropriate:<sup>8</sup>

We have examined the balance sheet of the X Company as of December 31, 19\_\_ and the related statement(s) of income and surplus for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the accompanying balance sheet and statement(s) of income and surplus present fairly the financial position of the X Company at December 31, 19\_\_, and the results of its operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with the preceding year.

Signed

If circumstances make it necessary, as when the audit has not been in detail or the auditors do not feel it proper to give their unqualified

<sup>7</sup> The reader interested in the subject of accountant's certificates will find a discussion in B. B. Greiderer, *Preparation and Certification of Financial Statements* (New York: Ronald Press Co., 1950), Chapters 14, 15. Illustrations of audit failures and criticisms by the Securities and Exchange Commission are cited. For a brief discussion of auditing principles and procedures, useful for the financial executive as well as the accountant, see American Institute of Accountants, *Codification of Statements on Auditing Procedure* (New York: Institute, 1951), which reviews the Institute's pronouncements over a 12-year period.

<sup>8</sup> *Ibid.*, (Codification), page 16.

approval of the report, the certificate will contain all the essential reservations and qualifications. If the report has been prepared for the use of the executives, it may have some comments on the figures presented that are likely to be of assistance in interpretation.

The more frequent reasons for qualifications are those occasioned by:

- (1) Restrictions placed on the scope of the audit;
- (2) Changes in accounting methods from the preceding period;
- (3) Departure from recognized and customary accounting principles;
- (4) Unusual items and situations.

The objective of the accountant should be a report that is as informative as possible within the limits set by accepted accounting principles. The analyst will read the certificate carefully for such light as it may throw upon the financial statements

If the auditors believe that misleading excerpts might be made from their reports or that their qualifying comment is essential in interpretation, they may insert some statement such as the following:

Our reports and certificates are issued with the understanding that, if published, either they must be reproduced in their entirety or, should it be desired to publish any references to, or extracts from them, such references or extracts shall be submitted for our approval.

**Forms for credit analysis.** The statement information will be received by the credit man in various forms: sometimes on his own forms, again as a credit agency report, and at other times just as the statements have been prepared by an outside auditor. The work of analysis will be facilitated by a recopy upon a special form. The advantages will be not only in uniformity, but also in increased ease of comparison with figures for other years, the possibility of adding ratios to the form, and the greater ease in handling. Original statements will, of course, be retained for reference. The actual form to be adopted will depend upon the characteristics of the statements generally received, and so the accompanying form is suggestive rather than final. Unlike a form being sent out, there is no need for completeness. Unusual items such as Advances to or Investments in Subsidiaries, Loans to Officers, Good Will, and Loans from Finance Companies can be written in the blank spaces whenever they are

significant amounts. (Room should be left in each section, although omitted in the accompanying form to economize space.) Very minor items can be lumped together as Miscellaneous in the proper section of the balance sheet. Only the most essential ratios are suggested here. Others found to be useful can be added, such as (a) fixed asset turnover, (b) current debt turnover, (c) gross and net profit margins, and (d) per cent earned on net worth. The reverse side of this summary record sheet or card can be used for miscellaneous information received from time to time, such as ledger interchange experience, and for unusual points noted in the study of the statements. Forms should be designed to fit the needs of the particular institution.<sup>9</sup>

**"Standard" ratios.** In summarizing the material for credit study, a reference to "standard" ratios is appropriate. By gathering a large number of statements in a single line of business, certain average (arithmetic mean) or very common (modal) ratios may be found that will be representative. These figures are sometimes regarded as a "standard," variation from which in an unfavorable direction is regarded as a sign of weakness. Knowledge of existing ratios is helpful, and those who have emphasized ratio study have been responsible for much of the existing concrete material on the subject; but the use of "standards" as an ideal comes dangerously close to making analysis a mechanical process. Reasonable differences among businesses are often explainable in a way that need not be unfavorable, much less fatal, to some of the concerns with below-standard ratios. On the one hand, the "standard" ratio may represent unnecessary

<sup>9</sup> A small bank dealing with small individual businesses and farmers might employ an even simpler form than that illustrated. The lending officer would be intimately familiar with borrowers and the credit file would chiefly serve the bank examiner or be useful in the event of illness or death of the officer. See B. E. Rhodes, "A Credit File for a Small Bank," *Burroughs Clearing House*, September, 1942, p. 26. An urban bank, especially one making term loans, would need more information with fairly detailed earnings and surplus data, such as developed by the forms committee of the Chicago Chapter of the Robert Morris Associates, "Simplified Bank Credit Records" *Burroughs Clearing House*, July, 1943, p. 16. For the reader interested in forms and illustrative analyses, some sources are: (1) A. F. Chapin, *Credit and Collection Principles and Practices* (New York: McGraw-Hill Book Co., Inc., 5th ed., 1947), pp. 425-431; (2) R. A. Foulke, *Practical Financial Statement Analysis* (New York: McGraw-Hill Book Co., Inc., 2nd ed., 1950), pp. 125-135; (3) W. J. Schultz, *Credit and Collection Management* (New York: Prentice-Hall, Inc., 1947), pp. 198-201; (4) Alexander Wall, *Basic Financial Statement Analysis* (New York: Harper and Brothers, 1942), pp. 70-109, (5) Chas. W. Williams, ed., *The Credit Department* (Philadelphia: Robert Morris Associates, 1946), Chapter X.

## FORM FOR CONDENSING STATEMENTS FOR BANK CREDIT FILE

Name\_\_\_\_

Address\_\_\_\_

Business\_\_\_\_

Assets	19-	19-	19-	19-	19-	19-	19-
Cash on Hand							
Cash in Bank							
Accounts Receivable (net)							
Notes Receivable (net)							
Marketable Securities							
Current Assets (excl mdse)							
Inventories							
Total Current Assets							
Land							
Buildings (net)							
Furniture and Equipment (net)							
Prepaid Expenses							
Total Assets							
<hr/>							
Liabilities and Net Worth							
Accounts Payable							
Notes Payable—Mdse							
Notes Payable—Bank							
Accrued Expenses							
Total Current Liabilities							
Bonds Payable							
Total Liabilities							
Capital Stock							
Surplus							
Total Liabilities and Net Worth							
<hr/>							
Working Capital							
Contingent Liabilities							
Maximum Current Debt in Year							
Minimum Current Debt in Year							
Average Bank Balance							
Reserves Deducted from Assets							
From Receivables							
From Buildings							
From Furniture and Equipment							
Net Sales							
Net Profits							
Dividends							
Ratios							
Curr Assets Curr Liab							
Curr Assets (excl mdse) Curr Liab							
Receivables Aver Daily Cr Sales							
Inventory Turnover							
Total Tangible Assets Total Debt							

strength; on the other, it may show a weak condition for the group as a whole. These opposite possibilities mean that a supply of facts does not remove the need for judgment as to what constitutes a sound credit risk. From time to time, judgment will require a modification of requirements to allow for changes in conditions within the industry or in the general state of business.

The most ingenious application of the standard ratio idea is undoubtedly the "index of credit strength" proposed by Wall and Duning. The ratios of a given business are compared with the "standard" ratios for that type of business and the resulting percentages are then weighted and combined into a single index, which is intended as a measure of the deviation from par in credit strength.<sup>10</sup> The method is subject to all of the difficulties attending the use of standard ratios already mentioned and the further one that the weight that should be accorded any particular ratio is necessarily variable. If a single fault is bad enough, the apparently favorable appearance of other ratios is an insufficient offset, even though it may be more than enough to cover up the fault in a composite index of arbitrarily weighted factors.

An illustration is found in the case of an installment clothing store. The statements furnished by this concern showed a very satisfactory current ratio, acid test, inventory turnover, net profit margin, and ratio of net worth to debt. The only major disproportion was in a high ratio of receivables to sales. These balances were at least four times what would have been expected in view of the credit terms. The indication of uncollectible accounts and overstated profits was unmistakable. In time, the cash from a sale of stock to the public was absorbed by this "expansion" and the business went into receivership. As in a case of crime detection, the one clue was sufficient. The weighting accorded the several elements in the credit or investment picture varies from case to case, and judgment must be exercised in making these shifting weightings of the numerous variables involved.

**Investment analysis materials.** Whereas financial analysis for credit purposes is largely a study in solvency, investment analysis subjects the statements to scrutiny for the possible light thrown upon

<sup>10</sup> A. Wall and R. W. Duning, *Ratio Analysis of Financial Statements* (New York: Harper & Brothers, 1928), Chapters X and XI; also Alexander Wall, *Basic Financial Statement Analysis* (New York: Harper & Brothers, 1942), Chapter VII.

earning power as well. Although different types of business will offer differing problems, a tentative outline of points generally studied is shown on the following page.

The material suggested in this tentative outline might be added to as it suits the analyst. Suggestions for various other fruitful relationships have been offered in preceding chapters and also appear in the discussion of special types of business in succeeding chapters. In particular cases, it might be of interest to include operating statistics as to output and the like, a picture of capital structure with stocks at market valuation rather than book values, or book value of the common stock broken up into net current and other assets per share. Additional ratios might also be added.<sup>11</sup>

Where certain nonfinancial factors of importance are found with sufficient frequency, they may be included on any form used, in order to insure their consideration. Such factors might be diversification of markets, labor relations, favorable plant location, and the like.

If but a single security were under scrutiny, some of the material suggested could be omitted. Thus, a bond of a stable enterprise with ample safety margin does not require the careful study of financial data that a speculative bond or a common stock would. Furthermore, the sums being invested will determine the amount of time and effort that can be devoted profitably to the study. Were the commitment sufficiently large, a field survey might even be undertaken to study operating conditions with something of the intensiveness that the management itself might undertake.

It is not possible to make a complete survey of all the aids to statement analysis that may be available or desirable for executive purposes. Such discussion would reach over into the field of statistical control. Business statistics is a distinct subject that serves with accounting as the means of managerial control. Moreover, the subject of production costs—falling in the specialized field of cost accounting—can only be indicated in this work.

<sup>11</sup> Other material on form and content may be found in (1) R. E. Badger and H. G. Guthmann, *Investment Principles and Practices* (New York: Prentice-Hall, Inc., 4th ed., 1951), pp. 253-261; (2) Benjamin Graham and D. L. Dodd, *Security Analysis* (New York: McGraw-Hill Book Co., 3rd ed., 1951), pp. 212-213; (3) G. W. Dowrie and D. R. Fuller, *Investments* (New York: John Wiley & Sons, Inc., 2nd ed., 1950), pp. 298, 322; (4) Moody's *Manual of Investments* (financial ratios are given for major corporations; and (5) *Standard Corporation Records* (Standard & Poor's Corporation)

**SUPPLEMENTARY INFORMATION**

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**SHORT OUTLINE FOR INVESTMENT ANALYSIS**

Name of business \_\_\_\_\_

	19—	19—	19—	19—	19—
I Working Capital Position					
Current Assets					
Current Liabilities					
Working Capital					
Current Ratio					
Long Term Debt Maturing in 25 years					
II Net Assets					
Working Capital					
Fixed Operating Assets					
Nonoperating Investments					
Intangibles					
Total					
III Capital Structure					
Bonds					
Preferred Stock					
Common Stock					
Capital Surplus					
Surplus Reserves					
Earned Surplus (Intangibles deducted)					
Total					
Percentage Proportions					
Bonds					
Preferred Stock					
Common Equity Less Intangibles					
Working Capital per \$1,000 Bond					
Net Tangible Assets per Share Common Stock					
IV Earnings					
Net Sales					
Depreciation					
Net Operating Income					
Other Income					
Net for Interest					
Interest					
Federal Income Taxes					
Preferred Dividends					
Common Dividends					
Surplus					
Depreciation to Gross Fixed Assets %					
Depreciation to Net Sales %					
Net Operating Profit Margin—%					
Times Interest Earned					
Times Interest and Preferred Dividends Earned					
Earned per Share Common					
Dividends per Share—Common					
Earned on Total Tangible Capital Structure					
Earned on Tangible Common Equity					
V Security Price Record (annual high low)					
(Title) Bonds					
Preferred Stock					
Common Stock					
Yield on Average Bond Price					
Yield on Average Preferred Stock Price					
Dividend Yield on Common Stock					
Earned on Common Stock P = %					

**Supplementary information for investors.** Indicative of the kind of information desirable for investment analysis purposes, is that required by the Securities and Exchange Commission from corporations registering their securities. In addition to the financial statements, information is required as to:

- (1) Facts about organization of corporation;
- (2) History and nature of business;
- (3) General character and location of principal plants and other important units;
- (4) Details about capital securities and any warrants or rights to subscribe to securities;
- (5) Names of persons who own more than 10 per cent of any class of equity security;
- (6) Names and addresses of all directors and officers;
- (7) Remuneration of all directors and officers; also of employees and other persons when they receive in excess of \$20,000 during year;
- (8) Any important bonus or profit-sharing arrangements;
- (9) Important management and supervisory contracts;
- (10) Dates, parties, and general tenor of important contracts;
- (11) Options to purchase securities given by corporation;
- (12) Information about any (a) substantial asset revaluation, (b) restatement of capital stock, or (c) amortization of bond discount and expense other than regular annual write-off;
- (13) Names of public accountants who have certified statements.

**Graphic presentation.** Because of the very great importance of suitable presentation in order to clarify the meaning of financial information, the utility of graphic forms should not be overlooked. The greater ease with which one may read a graph, as compared with a table of figures, explains the increased use of this form of presenting figures. It is much easier to see the rise and fall of a line in a picture before one than to examine a series of figures that tell the same story. So a graph picturing sales, operating expenses, net earnings available for dividends, and dividends paid would make vivid some of the most important points to be examined in a series of earnings statements.

Thus, the accompanying Figure 7 shows Bethlehem Steel Corporation's earnings and their distribution for the years 1929-1951 much more vividly than the accompanying table. The total height

of the white portion of the bar represents net income available for interest and dividends. The claims are marked off from bottom to top in the order of their priority: interest charges, preferred dividends, and, when they exist, common dividends and surplus. Common dividends were continued in 1930 and 1931 in amounts exceeding the

### BETHLEHEM STEEL CORPORATION EARNINGS AND THEIR DISTRIBUTION\*

YEARS ENDED DECEMBER 31 \*

(Thousands of Dollars)

Year	Available for Fixed Charges	Fixed Charges	Preferred Dividends	Common Dividends	Surplus or Deficit
1929	53 460	11 217	17 000	15 600	19 643
1930	31 016	7 173	17 000	19 200	2,357d
1931	7 542	7 426	6 895	6 400	13,173d
1932	12 500d	6 597	1 645		21,049d
1933	10,000d	6 702			8,736d
1934	7 354	6 804	1 634		1 084d
1935	11 509	7 218	3 269		1 023
1936	20 415	6 514	5 603	4 787	3,510
1937	38 756	6 966	7 471	15 941	8 407
1938	12 378	7 128	7 471		2 221d
1939	32 133	7 495	7 471	4 775	12 392
1940	56 022	7 578	6 537	11 925	26 982
1941	40 418	5 961	6 537	17 910	10 010
1942b	30 961	5 573	6 537	17 910	911
1943	37 804	5 679	6 523	17 910	7 692
1944b	42 025	5 857	6 537	17 910	11 721
1945	40 769c	5 821	6 537	17 910	10 500
1946	33 286	2 554	6 537	17 910	6 285c
1947b	55 014	3 925	6 537	17 910	26 641
1948	95 253	1 905	6 537	21 492	62,318
1949	101 548	5 265	6 537	22 999	69 747
1950	125 001	5 024	6 537	39 290	77,149
1951	112 729	6 197	6 537	38 332	61,662

\* Standard Corporation Descriptions.

a Includes dividends declared in January after close of fiscal year.

b As restated in annual report of following year.

c Excluding \$11 000 000 credit from contingency reserve to offset strike costs.

d = deficit.

e After deducting amortization of debt discount + bonds redeemed.

balance available. Unearned preferred dividends were paid in 1932, 1934, and 1938. The deficit (decrease in Retained Earnings or Surplus) after the payments in any year is shown by the shaded area. In 1931, the earnings barely covered interest charges, and both preferred and common dividends contributed to the deficit. In 1932 and

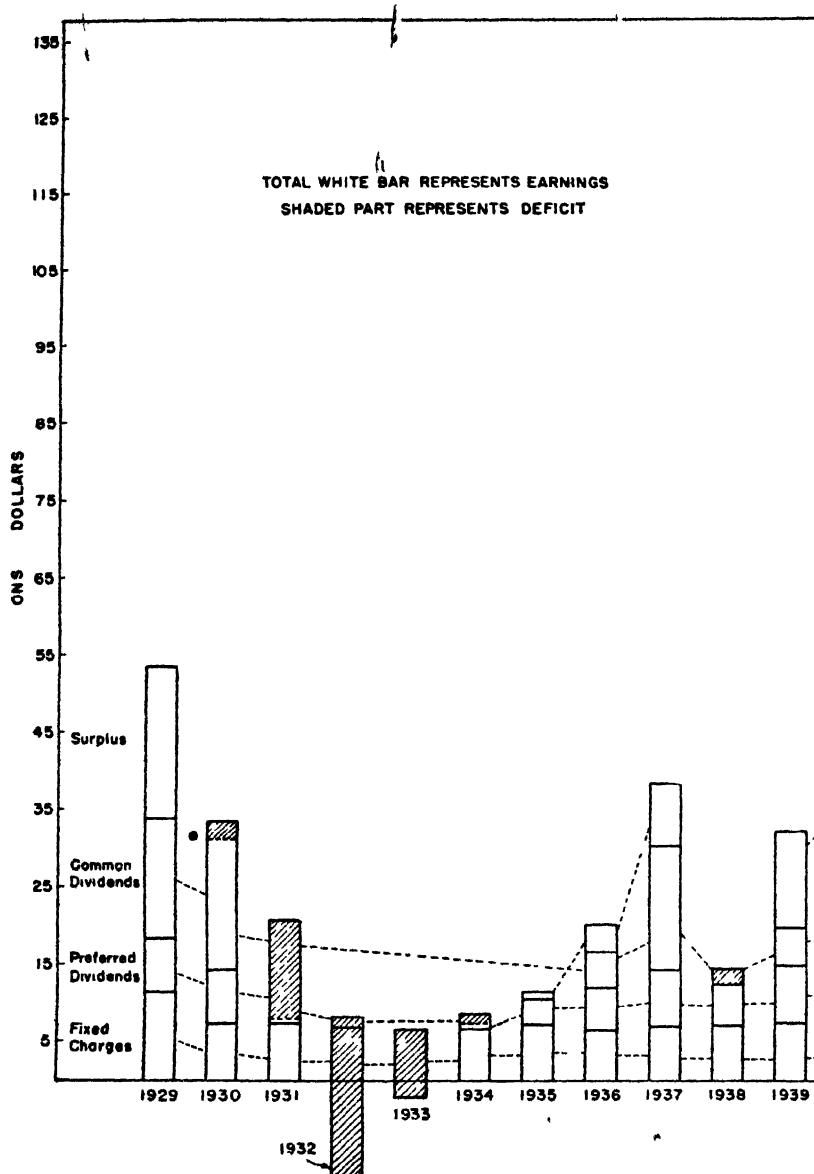
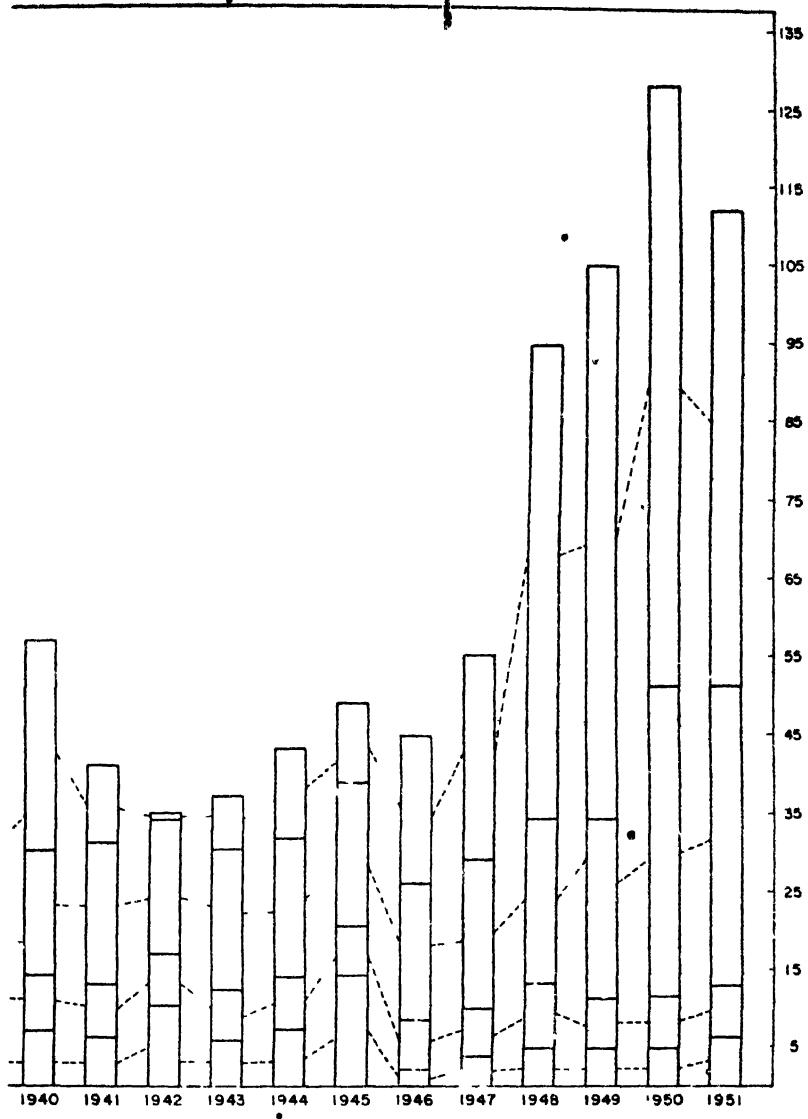


Fig. 7.—Bethlehem Steel Corporation



#### Earnings and Their Distribution.

1933, the income statement showed a deficit even before interest by the amounts which the shaded, or cross-hatched, areas extend below the base line. A more vivid effect might be had by introducing a different type of cross-hatching for each section of the bar and then coloring the deficit area with the conventional red-ink color. However, simple black-and-white effects are preferable for most commercial work because they permit quick and inexpensive reproduction, as compared with color work. The bars for the later years offer no problems of a chart-reading nature. The war years (1941-1945) showed earnings markedly higher than during the depressed 1930's, but income and excess profits taxes held them in check. The tax influence could be depicted by adding a dotted bar on the top of the bars in the figure to show the phantom earnings that might have been possible if taxes had been different. Income taxes were not shown in this chart because it is intended to show what the corporation investors earned. To insert the income taxes between the interest and the stockholders' income in their position of legal priority would give bars whose height would fail to show earnings. The high earnings in the years 1948-1951 were partly the result of a very high rate of steel mill activity and partly of a much higher price level.

One point should be emphasized as to the nature of graphs, one recommendation made, and one caution given. First, as to the nature of graphs: they are prepared to tell the facts at a glance, and if detailed study is required, they fail in their primary purpose. A good graph must be clear. Second, it may be recommended that, where possible, it is a wise precaution to give a tabulation of the figures used. In the third place, it is necessary to guard against possible optical errors.

**Misleading graphs.** For any thorough study of graphs, a special work on the subject of statistical presentation should be studied.<sup>12</sup> Two misleading conditions have been so frequently found in the presentation of financial data that they may properly be mentioned here. The first condition indicates how the eye may be misled, and the second, how the study of special forms is essential to insure the utilization of correct methods in graphic work.

The pair of graphs shown in Figure 8 represent the same figures

<sup>12</sup> Misleading charts are discussed in F. E. Croxton and D. J. Cowden, *Practical Business Statistics* (New York: Prentice-Hall, Inc., 2nd ed. 1948), Chapters 5-7.

for the sales of a certain firm. Because the base line that would stand for zero has been erased in the right-hand figure, one is likely to gain an incorrect impression. The rise is so emphasized in that figure that the sales appear to have been increased rather more rapidly than in the case of the data presented in the left-hand figure. The reason for this difference lies in the tendency of the eye to measure the quantities or values presented as so much distance between the base line and the line representing the data. Quantities at different points on the data line are consequently given relative values dependent upon their relative height, an interpretation that is correct only when the base line is zero.

TABLE OF SALES (CHARTED)

Year	Amount of Sales
1920	\$130,000
1921	110,000
1922	125,000
1923	140,000
1924	160,000
1925	175,000
1926	200,000

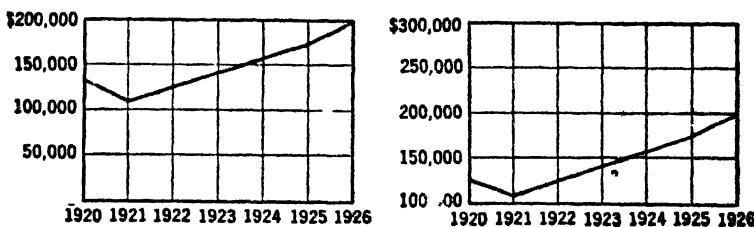


Fig. 8.—Illustration of Visual Effect of Different Base Lines.

In one instance, the promoters of a speculative stock wished to show graphically how the price of their stock had risen. The price had increased from \$25 to about \$32 during a relatively short period of promotion. By making the base line \$22 instead of zero, the reader was given the impression that the stock had about tripled in value in the interval, because \$32 was three and one third times as far from the base line as \$25. So, in the figure for sales given in the above illustration, the impression made by the second graph is that the amount has been multiplied a number of times, where the correct

figure shows the increase to have been but a fraction of the value in the initial year.

**Ratio charts.** Another problem in graphic presentation arises where the object is not to present certain quantities, such as the total sales, but where, rather, the percentage of increase or decrease of

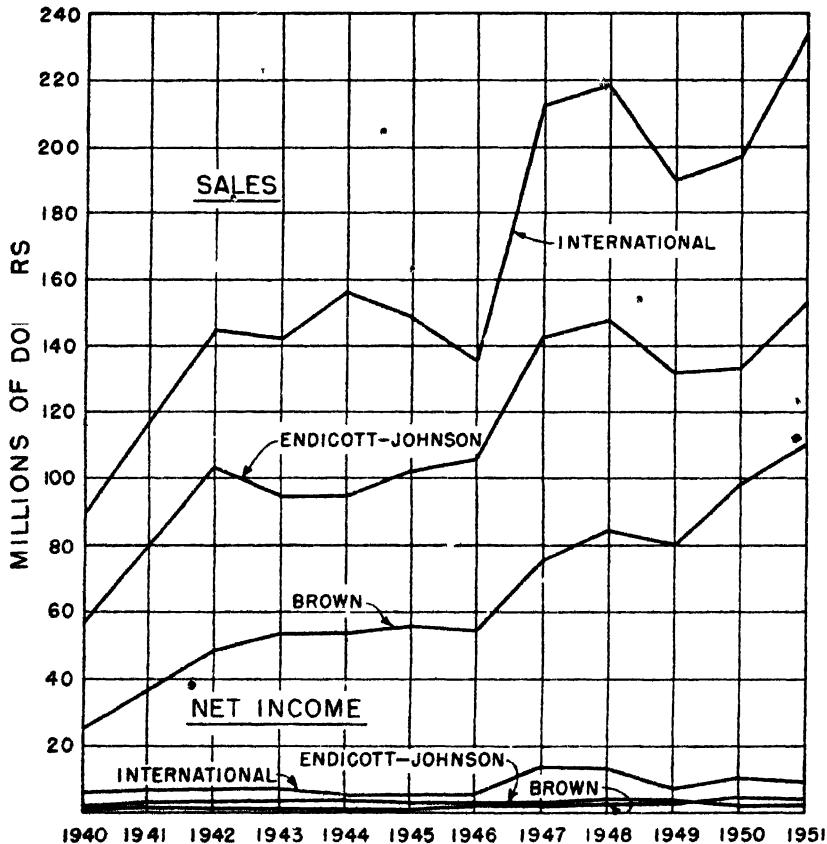


Fig. 9.—Sales and Net Income of Leading Shoe Manufacturers, 1940-1951  
—Rectilinear Chart.

one item, such as sales, is to be compared with the percentage increase or decrease of some other item, such as expenses. Many charts are made with the express intention of showing relative variations; but when drawn on ordinary rectilinear ruling, they give a misleading picture. A chart upon which a certain vertical distance always repre-

sents the same percentage change rather than the same numerical change meets this difficulty. This result is accomplished by the ratio, or "semilogarithmic," chart.<sup>18</sup>

On the rectilinear chart, the same numerical change is always represented by the same vertical distance, whereas on the ratio chart, the same percentage change is always represented by the same vertical distance. For example, in the rectilinear chart, the vertical distance between 1,000 and 2,000 is the same as between 5,000 and 6,000, because the numerical difference is the same—1,000 in both cases. Note, however, that whereas the numerical increase is the same in both cases, the percentage increase is very different, being 100 per cent in the first case and 20 per cent in the second. In the ratio chart, however, the vertical distance from 1,000 to 2,000 (100 per cent increase) is considerably greater than from 5,000 to 6,000 (20 per cent increase) but is the same as from 5,000 to 10,000 (100 per cent increase). Also, the distance from 1,000 to 1,200 (20 per cent increase) is the same as from 5,000 to 6,000 (20 per cent increase).

The net sales and net income figures for three leading shoe manufacturers—International Shoe Company, Endicott-Johnson Corporation, and the Brown Shoe Company, Inc.—as shown in the accompanying table, are used to illustrate the difference between the two types of chart. Plotted in the accompanying ordinary rectilinear chart, the figures for sales are prominent and those for net income (in this case, the same as net profits) are so small as to conceal fluctuations and trends. For these data, relative rise and fall, or fluctuation, is more important to the analyst than the absolute dollar changes. The ratio chart figure brings out this relative fluctuation. As would be expected, net income is more variable percentagewise than sales. Whereas the mere size of the International sales figures makes their movement seem more extreme in the first chart, the ratio chart brings out the very similar relative sales fluctuations of all three companies, although the narrowing spread between the sales line of Brown Shoe and the two larger companies, especially after 1946, indicates that the former company was gaining on the latter. The ratio chart also brings out the relative fluctuations or stability of net income from year to year. The most remarkable change occurred in 1946 when Brown Shoe net income rose abruptly to a

<sup>18</sup> *Ibid.*, Chapter 6

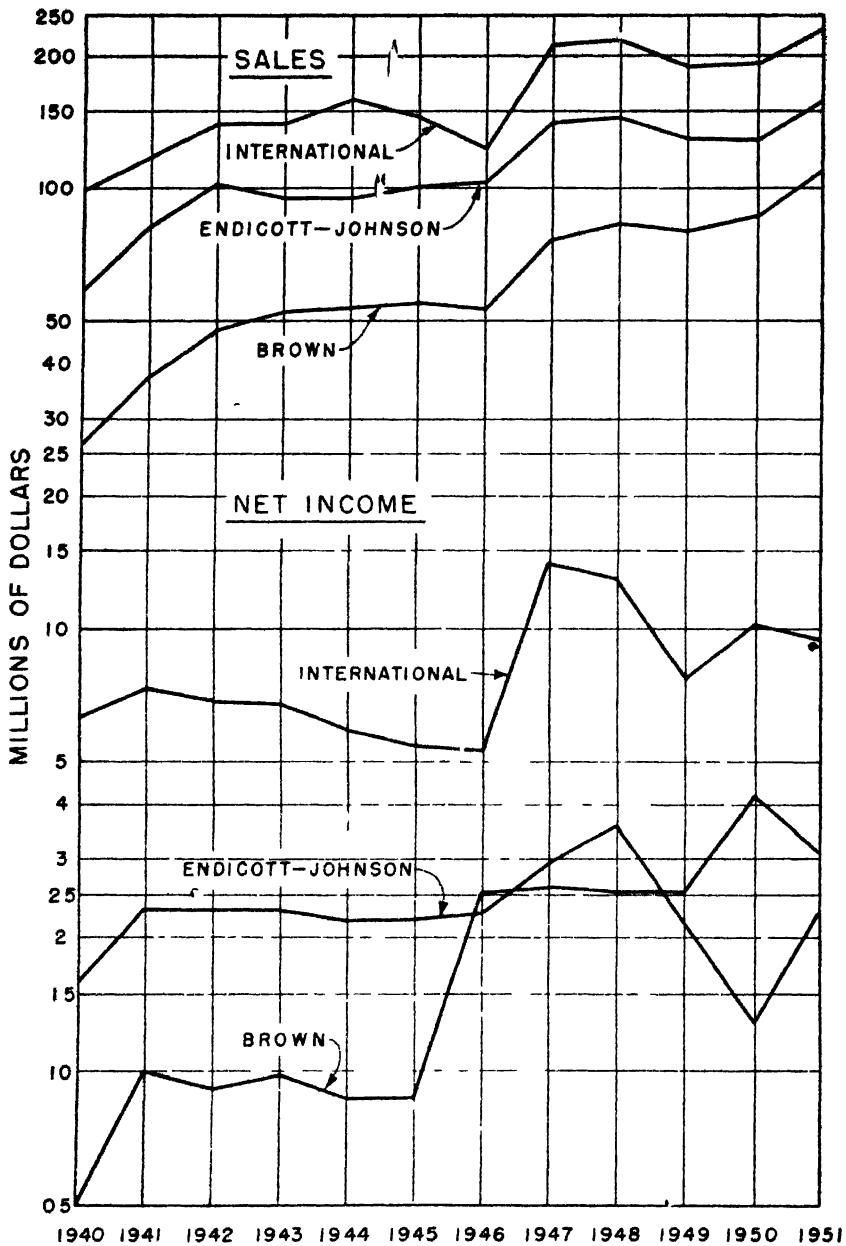


Fig. 10.—Sales and Net Income of Leading Shoe Manufacturers—  
Ratio Chart.

higher figure than that for Endicott-Johnson. The figures of all three companies reflect the lifting of excess profits taxes in 1946, the rising price level, and generally favorable business conditions. It is unnecessary to analyze this case further to illustrate the point. A study is indicated of such influences upon net income as differences in inventory valuation, in markets served, in the income tax burden and in profit margins. These factors have been discussed at an earlier point.

**SALES AND NET INCOME OF LEADING SHOE  
MANUFACTURERS 1940-1951**

(Thousands of Dollars)

Year	Net Sales			Net Income		
	International	Endicott-Johnson	Brown	International	Endicott-Johnson	Brown
1940	\$ 89 257	\$ 57 636	\$ 25 633	\$ 6 474	\$ 1 664	\$ 498
1941	116 530	80 852	37 737	7 207	2 351	1 012
1942	144 256	103 876	48 223	6 995	2 344	920
1943	142 841	95 779	53 212	6 734	2 310	979
1944	156 642	95 566	53 225	5 964	2 271	785
1945	148 783	102 093	56 458	5 569	2 267	791
1946	135 031	105 859	54 966	5 449	2 377	2 514
1947	212 918	142 029	76 021	14 002	2 938	2,607
1948	219 405	118 650	84 404	13 420	3 623	2 555
1949	190 003	131 677	80 377	7 682	2 294	2 543
1950	198 610	133 331	89 313	10 957	1 392	4 271
1951	233 317	157 317	111 393	8 973	2 329	3,134

The ratio chart thus presents for rapid inspection a picture of relative variation of two or more series, or of the variation of even a single series, in a way that no table possibly can. Even an elaborate percentage study would be less telling although once the major differences have been presented in the graphic fashion, a few percentage statements may fortify the description of the chart. Thus the percentage increases in sales and net income for the period 1940-1951 were as follows.

	Sales Increase	Net Income Increase
International	161%	39%
Endicott-Johnson	173	40
Brown	304	528

It will be noted that no zero amount or deficit can be represented upon the ratio chart. The base line does not have any significance, as it ordinarily does in a well-constructed rectilinear chart with a

zero base line that facilitates comparisons of absolute amounts by their vertical distances from it.

**Summary.** This chapter has suggested something of the form to be followed in financial statement analysis for mercantile and bank credit work and for investment purposes. The task is admittedly difficult because in practice the form must be adapted to fit the data that are ordinarily available and to meet the peculiar needs of the user of the material. Variations in available data and in a user's needs will require modification of any general form put forward.

The supplementary information noted in this chapter is worthy of special study, for often the discovery of a single hidden factor sufficient to make for success or failure will rest upon some one clue. Graphic presentation is mentioned here because so frequently it is the most effective instrument for bringing out important tendencies and presenting them effectively.

## FORM OF FINANCIAL STATEMENTS REQUIRED BY SECURITIES AND EXCHANGE COMMISSION

Among the various forms published by the Securities and Exchange Commission the student of statements will be especially interested in Form S-1 for corporations that are applying for the registration of the securities about to be offered to the public, and Form 10-K for the annual report of corporations whose securities are listed on a registered securities exchange. With each form there is an instruction book Regulation S-X on the Form and Content of Financial Statements from which much of the following material is drawn, should be studied carefully.

The Commission recognizes that some "average investors" will not always appreciate or even grasp the significance of some portions of such information but it believes that everything that it asks possesses value to the investing public and that this should be made available to those who want it especially those who undertake to give advice to investors.

As required by law, the financial statements are to be certified by certified public accountants after proper audit.

A fuller statement of the requirements as well as rulings may be found in the *Securities Regulations Service*, published by Prentice-Hall, Inc.

**Balance sheet.** Where, in these instructions, "the basis of determining the amount is required, the basis shall be stated specifically. The term 'book value' is not sufficiently explanatory unless, in the instructions, it is stated to be acceptable with respect to an item."

The amounts of assets mortgaged, pledged or otherwise subject to lien shall be designated and the obligations secured shall be briefly identified. However, in the case of commercial, industrial, and public utility companies this rule need not be followed with respect to assets (other than current assets and securities) given as security for bonds, mortgages and similar debt.

The basis of conversion of all items in foreign currencies shall be stated, and the amount and disposition of the resulting unrealized profit or loss

shown if significant. (See Regulation S-X, especially Article 3, for further general instructions on balance sheet.)

**Current assets:** Items classed as current assets shall be generally realizable within one year. However, generally recognized trade practices may be followed with respect to the inclusion of items such as installment receivables or inventories long in process, provided an appropriate explanation of the circumstances is made and, if practicable, an estimate is given of the amount not realizable within one year.

1. *Cash and Cash Items:*

State separately (a) cash on hand, demand deposits, and time deposits; (b) call loans; (c) funds subject to withdrawal restrictions

2. *Marketable Securities:*

Include only securities having a ready market. Securities of affiliates shall not be included here. State the basis of determining the amount at which carried. The aggregate cost, and aggregate amount on the basis of current market quotations, shall be stated parenthetically or otherwise

3. *Notes Receivable (Trade):*

4. *Accounts Receivable  
(Trade):*

5. *Reserves for Doubtful Notes  
and Accounts Receivable  
(Trade):*

Notes and accounts receivable known to be uncollectible shall be excluded from the assets as well as from the reserve accounts

6. *Inventories.*

(a) State separately, or in a footnote referred to herein, if practicable, the major classes of inventory such as (1) finished goods, (2) work in process, (3) raw materials, and (4) supplies.  
(b) The basis of determining the amounts shall be stated. If a basis such as "cost," "market," or "cost or market whichever is lower" is given, there shall also be given, to the extent practicable, a general indication of the method of determining the "cost" or "market". e.g., "average cost" or "first-in-first-out," or "last-in-first-out."

7. *Other Current Assets:*

(a) State separately (1) total of current amounts, other than trade

accounts subject to the usual trade terms, due from directors, officers, and principal holders of equity securities other than affiliates; (2) total of current amounts due from parents and subsidiaries; and (3) any other amounts in excess of 10 per cent of total current assets, indicating any such amount due from affiliates other than parents and subsidiaries.

(b) Indebtedness of a parent or subsidiary, or any affiliate designated under (a) (3) shall not be considered as current unless the net current asset position of such person justifies such treatment. In the registrant's balance sheet show separately that indebtedness which in the related consolidated balance sheet is (1) eliminated and (2) not eliminated.

*8. Total Current Assets:*

**Investments:**

*9. Securities of Affiliates:*

State the basis of determining the amount. State separately the amount which in the related consolidated balance sheet is (a) eliminated and (b) not eliminated.

*10. Indebtedness of Affiliates-  
Not Current:*

State separately the indebtedness which in the related consolidated balance sheet is (a) eliminated and (b) not eliminated.

Provision for necessary reserves shall be shown.

*11. Other Security Investments:*

State the basis of determining the amount. If available, state parenthetically, or otherwise, the aggregate amount on the basis of market quotations.

*12. Other Investments:*

State separately, by class of investments, any items in excess of 10 per cent of the amount of all assets other than fixed and intangible.

**Fixed assets:****13. Property, Plant, and Equipment:**

(a) State separately here, or in a footnote referred to herein, if practicable, each major class, such as land, buildings, machinery and equipment, leaseholds, or functional grouping, and the basis of determining the amounts.

(b) Tangible and intangible utility plant of a public utility company shall be segregated so as to show separately the original cost, plant acquisition adjustments, and plant adjustments, as required by the system of accounts prescribed by the applicable regulatory authorities. This rule shall not be applicable in respect of companies which are not otherwise required to make such a classification or have not completed the necessary original cost studies. If such classification is not otherwise required or if such original cost studies have not been completed, an appropriate explanation of the circumstances shall be set forth in a note which shall include a specific statement as to the status of the original cost studies and, to the extent practicable, the results indicated thereby.

**14 Reserves for Depreciation, Depletion, and Amortization of Property, Plant, and Equipment (or Reserves in Lieu thereof):****Intangible assets:****15. Patents, Trade Marks, Franchises, Good Will, and Other Intangible Assets.**

State the basis of determining the amounts

**16. Reserves for Depreciation and Amortization of Intangible Assets:**

**Deferred charges:**

17. *Prepaid Expenses and Other Deferred Items:* State separately any material items. Prepayments of services to be received within one year may, however, be included under caption 7.

18. *Organization Expense:* State the method of amortization, if any.

19. *Debt Discount and Expense:* State the method of amortization.

20. *Commissions and Expense on Capital Shares:* State the method of amortization, if any. These items may be shown as deductions from surplus.

**Other assets:**

21. *Other Assets:* State separately (a) total of amounts due from directors, officers, and principal holders of equity securities other than affiliates, (b) each pension or other special fund; and (c) any other item in excess of 10 per cent of the amount of all assets other than fixed and intangible.

**LIABILITIES, CAPITAL STOCK, AND SURPLUS**

**Current liabilities:** Items due and payable within one year shall in general be classed as current liabilities. However, generally recognized trade practices may be followed with respect to the exclusion of items such as customers' deposits and deferred income, provided an appropriate explanation of the circumstances is made.

22. *Notes Payable:* State separately amounts payable (a) to banks, (b) to trade, and (c) to others.

23. *Accounts Payable (Trade)*

24. *Accrued Liabilities:* State separately (a) accrued payrolls; (b) tax liability, (c) interest; and (d) any other material items.

25. *Other Current Liabilities:* State separately (a) dividends declared, (b) bonds, mortgages, and similar debt; (c) total of current amounts due to parents and subsidiaries, showing separately in the registrant's balance sheet the amounts

which in the related consolidated balance sheet are (1) eliminated and (2) not eliminated; (d) total of current amounts, other than items arising in the ordinary course of business, due directors, officers, and principal holders of equity securities other than affiliates; and (e) any other item in excess of 10 per cent of total current liabilities, indicating any such liability due to affiliates other than parents and subsidiaries. Remaining items may be shown in one amount.

**26. Total Current Liabilities:**

**Deferred income:**

**27. Deferred Income:**

**Long-term debt:**

**28. Bonds, Mortgages, and Similar Debt:**

State separately here, or in a note referred to herein, each issue or type of obligation and such information as will indicate (a) the general character of each type of debt including the rate of interest; (b) the date of maturity, or if maturing serially, a brief indication of the serial maturities, such as "maturing serially from 1950 to 1960"; (c) the aggregate amount of maturities, and sinking fund requirements, each year for the five years following the date of the balance sheet; (d) if the payment of principal or interest is contingent, an appropriate indication of such contingency; (e) a brief indication of priority; and (f) if convertible, the basis.

**29. Indebtedness to Affiliates—Not Current:**

State separately indebtedness which in the related consolidated balance sheet is (a) eliminated and (b) not eliminated.

**30. Other Long-Term Debt:**

Include under this caption all amounts of long-term debt not provided for under captions 28 and 29 above. State

separately (a) total amounts due bank-, (b) total amounts due directors, officers, and principal holders of equity securities other than affiliates, and (c) other long-term debt, specifying any material item. Indicate whether secured. Show here, or in a note referred to herein, the information required under caption 28.

**Other liabilities:****31. Other Liabilities:**

State separately any amount in excess of 10 per cent of the total of liabilities, other than long-term debt.

**32. Commitments and Contingent Liabilities:**

*Commitments*—(a) If material in amount the pertinent facts relative to firm commitments for the acquisition of permanent investments and fixed assets and for the purchase, repurchase, construction, or rental of assets under long-term leases shall be stated briefly in the balance sheet or in footnotes referred to therein.

(b) Where the rentals or obligations under long-term leases are material there shall be shown the amounts of annual rentals under such leases with some indication of the periods for which they are payable, together with any important obligation assumed or guarantee made in connection therewith. If the rentals are conditional, state the minimum annual amounts.

*Contingent liabilities*—A brief statement as to contingent liabilities not reflected in the balance sheet shall be made. In the case of guarantees of securities of other issuers a reference to the appropriate schedule shall be included.

**Reserves (not elsewhere provided for):****33. Reserves, Not Shown Elsewhere:**

State separately each major class and indicate clearly its purpose.

**Capital shares and surplus:** Financial statements may be filed in such form and order, and may use such generally accepted terminology, as will best indicate their significance and character in the light of the provisions applicable thereto.

**34 Capital Shares:**

State for each class of shares the title of issue, the number of shares authorized, the number of shares outstanding, and the capital share liability thereof, and, if convertible, the basis of conversion. Show also the dollar amount, if any, of capital shares subscribed but unissued, and of subscriptions receivable thereon.

**35 Surplus:**

(a) Separate captions shall be shown for (1) paid-in surplus, (2) surplus arising from revaluation of assets, (3) other capital surplus, and (4) earned surplus (i) appropriated and (ii) unappropriated.

(b) If undistributed earnings of subsidiaries are included, state the amount thereof parenthetically or otherwise. However, in a consolidated statement the preceding sentence shall have reference only to the undistributed earnings of subsidiaries not consolidated in such a statement.

(c) Subsequent to the effective date of a quasi-reorganization any description of earned surplus shall indicate the point of time from which the new earned surplus dates and for a period of at least three years shall indicate the total amount of the deficit eliminated.

(d) An analysis of each surplus account setting forth the information prescribed in rule 11-02 shall be given for each period for which a profit and loss statement is filed, as a continuation of the related profit and loss statement or in the form of a separate statement of surplus, and shall be referred to here.

**Balance sheet notes:**

- A. Contingent liabilities not reflected in the balance sheet shall be given due consideration here.
- B. If there be arrears in cumulative dividends, state the amount per share and in total.
- C. The facts and amounts with respect to any default in principal, interest, or sinking fund provisions shall be stated here if not shown in the balance sheet.

**Profit and loss or income statements**

If income is derived from both Gross Sales (caption 1.A. below) and Operating Revenues (caption 1.B. below), the two classes may be combined in one amount if the lesser amount is not more than 10 per cent of the sum of the two items. If these items are combined, the Cost of Goods Sold (caption 2.A. below) and Operating Expenses (caption 2.B. below) may be combined in one amount.

**1.A. Gross Sales Less Discounts, Returns, and Allowances.**

State separately, if practicable, (i) sales to parents and subsidiaries and (ii) sales to others.

**2.A. Cost of Goods Sold:**

(a) State the amount of cost of goods sold as regularly computed under the system of accounting followed. Indicate the amount of opening and closing inventories used in the computation, and state the basis of determining such amounts.

(b) Merchandising organizations, both wholesale and retail, may include occupancy and buying costs under this caption. However, publicity costs shall be included under caption 4 below or shown separately.

**1.B. Operating Revenues:**

State separately, if practicable, revenues from (a) parents and subsidiaries and (b) others. A public utility company using a uniform system of accounts or a form for annual report prescribed by Federal or state authorities, or a similar system or report, shall follow the general segregation of revenues prescribed by such system or report.

2.B. *Operating Expenses:* State separately, if practicable, purchases from and services rendered by (a) parents and subsidiaries and (b) others. A public utility company using a uniform system of accounts or a form for annual report prescribed by Federal or state authorities, or a similar system or report, may follow the general segregation of operating expenses prescribed by such system or report.

3. *Other Operating Expenses:* State separately any material amounts not included in captions 2.A. or 2.B. above.

4. *Selling, General, and Administrative Expenses:*

5. *Provision for Doubtful Accounts:*

6. *Other General Expenses:* Include items not normally included in caption 4 above. State separately any material amount

**Other income:**

7. *Dividends:* State separately, if practicable, the amount of dividends from (a) securities of affiliates, (b) marketable securities, and (c) other security investments

8. *Interest on Securities:* State separately, if practicable, the amount of interest from (a) marketable securities, (b) securities of affiliates, (c) other security investments.

9. *Profits on Securities:* Profits shall be stated net of losses. No profits on the person's own securities, or those of its affiliates, shall be included under this caption. State here or in a note herein referred to the method followed in determining the cost of securities sold, e.g., "first-in-first-out"; "average cost"; or "identified certificate."

10. *Miscellaneous Other Income:* State separately any material amounts, indicating clearly the nature of the transactions out of which the items arose.

**Income deductions:**

11. *Interest and Debt Discount and Expense:* State separately (a) interest on bonds, mortgages, or similar debt; (b) amortization of debt discount and expense or premiums; and (c) other interest.

12. *Losses on Securities:* Losses shall be stated net of profits. No losses on the person's own securities, or those of its affiliates, shall be included under this caption. State here or in a note herein referred to the method followed in determining cost of securities sold, e.g., "average cost," "first-in-first-out" or "identified certificate."

13. *Miscellaneous Income Deductions:*\* State separately any material amounts, indicating clearly the nature of the transactions out of which the items arose.

**14. Net Income or Loss Before Provision for Taxes on Income:**

15. *Provision for Income and Excess Profits Taxes:* State separately (a) Federal normal income and surtax; (b) Federal excess profits tax; and (c) other income taxes.

16. *Net Income or Loss:*

17. *Special Items:* State separately and, describe each item of profit and loss given recognition in the accounts and not included in the determination of net income or loss (caption 16).

18. *Net Income or Loss and Special Items:* (a) See rule 5-02 [caption 35 (d)].

**Schedule I—Marketable securities—other security investments.—**

COL. A	COL. B	COL. C	COL. D
Name of Issuer and Title of Issue (Note 1)	Number of Shares or Units--Principal Amount of Bonds and Notes	Amount at Which Carried in Balance Sheet (Note 2)	Value Based on Current Market Quotations at Balance Sheet Date

**SUPPLEMENTARY INFORMATION**

**Note 1.** (a) Each issue shall be stated separately, except that reasonable groupings, without enumeration, may be made with respect to (1) securities issued or guaranteed by the United States Government and (2) investments as to which the aggregate amount carried in column C is not more than 2 per cent of total assets.

(b) In the case of bank holding companies group separately (1) securities of banks and (2) other securities, and in column C show totals for each group

2. State the basis of determining the amounts in column C. Column C shall be totaled to agree with the respective balance sheet captions

**Schedule III—Investments in securities of affiliates.—**

COL A	COL B		COL C		COL D		COL E	
Name of Issuer and Title of Issue (Note 1)	Balance at Beginning of Period (Note 2)		Additions		Deductions		Balance at Close of Period	
	(1) Number of Shares or Units Principal Amount of Bonds and Notes	(2) Amount in Dollars	(1) Number of Shares or Units Principal Amount of Bonds and Notes	(2) Amount in Dollars (Note 3)	(1) Number of Shares or Units Principal Amount of Bonds and Notes	(2) Amount in Dollars (Note 4)	(1) Number of Shares or Units Principal Amount of Bonds and Notes	(2) Amount in Dollars

**Note 1.** (a) Group separately securities of (1) subsidiaries consolidated, (2) subsidiaries not consolidated, and (3) other affiliates, showing shares and bonds separately in each case. Within each group major investments shall be stated separately. Reasonable grouping without enumeration may be made of other investments.

(b) Those foreign investments, the enumeration of which would be detrimental to the registrant, may be grouped

2. The balance at the beginning of the period of report may be as per the accounts

3. If the cost of additions in column C represents other than cash expenditures, explain. If acquired from an affiliate (and not an original issue of that affiliate) at other than cost to the affiliate, show such cost, provided the acquisition by the affiliate was within two years prior to the acquisition by the person for which the statement is filed

**4. State:** (a) Cost of items sold and how determined; (b) amount received (if other than cash, explain); and (c) disposition of resulting profit or loss.

**Schedule V—Property, plant and equipment (Note 1).—**

COL. A	COL. B	COL C	COL D	COL E	COL F
Classification (Note 2)	Balance at Beginning of Period (Note 3)	Additions at Cost (Note 4)	Retirements or Sales (Note 5)	Other Changes — Debit and/or Credit — Describe (Note 6)	Balance at Close of Period

**Note 1.** If the financial statements are being filed as part of an annual or other periodic report, comment briefly on any significant and unusual additions, abandonments, or retirements, or any significant and unusual changes in the general character and location, of principal plants and other important units, which may have occurred within the period.

**2. (a)** Show by major classifications such as land, buildings, equipment, or leaseholds. If such classification is not present or practicable, this may be stated in one amount. The additions included in column C shall, however, be segregated in accordance with an appropriate classification. If property, plant, and equipment abandoned is carried at other than a nominal amount, indicate, if practicable, the amount thereof and state the reasons for such treatment. Items of minor importance may be included under a miscellaneous caption.

**(b) Public utility companies.** A public utility company shall, to the extent practicable, classify utility plant by the type of service rendered (such as electric, gas, transportation, and water) and shall state separately under each of such service classifications the major subclassifications of utility plant accounts.

**(c) Mining companies using Article 5A.** Such mining companies shall include herein only depreciable mine plant and equipment at the dollar amounts required by the instructions set forth under caption 13, property, plant, and equipment of Article 5A [§ 8605A]. A mining company falling into this category shall also, to the extent practicable, observe the other instructions set forth under this rule.

**3.** The balance at the beginning of the period of report may be as per the accounts. If neither the total additions nor the total deductions during the period amount to more than 10 per cent of the closing balance and a statement to that effect is made, the information

## SUPPLEMENTARY INFORMATION

required by columns B, C, D, and E may be omitted: *Provided* That the totals of columns C and D are given in a footnote, and *Provided further*, That any information required by Notes 4, 5 and 6 shall be given and may be in summary form

4. If the changes in property accounts in column C represent anything other than additions from acquisitions, state clearly the nature of the changes and the other accounts affected. If cost of property additions represents other than cash expenditures, explain. If acquired from an affiliate at other than cost to the affiliate, show such cost, provided the acquisition by the affiliate was within two years prior to the acquisition by the person for which the statement is filed
5. If changes in column D are stated at other than cost, explain if practicable
6. State clearly the nature of the changes and the other accounts affected. If provision for depreciation, depletion, and amortization of property, plant, and equipment is credited in the books directly to the asset accounts, the amounts shall be stated in column E with explanations, including the accounts to which charged

### Schedule VI—Reserves for depreciation, depletion, and amortization of property, plant, and equipment (Note 1).—

COL A  Description (Note 2)	COL B  Balance at Beginning of Period (Note 3)  "	COL C		COL D		COL E  Balance at Close of Period	
		Additions		Deductions from Reserves			
		(1) Charged to Profit and Loss or Income	(2) Charged to Other Accounts — De- scribe	(1) Retire- ments Renewals and Replace- ments	(2) Other — Describe		

**Note 1.** (a) If other reserves are created in lieu of depreciation reserves, the same information shall be given with respect to them

(b) Insofar as amounts for depreciation, depletion, and amortization are credited to the property accounts, such amounts shall be shown in the schedule of property, plant, and equipment, as there required

(c) **Mining companies using Article 5A.** Such mining companies shall include herein only the amount of the reserve for depreciation, depletion, and amortization of mine property, plant, and equipment and unrecovered promotional, exploratory,

and development costs applicable to the amounts set forth in the schedule filed pursuant to Rule 12-06 and Rule 12-06A. A mining company falling into this category shall also, to the extent practicable, observe the other instructions set forth under this rule.

2. If practicable, reserves shall be shown to correspond with the classifications of property set forth in the related schedule of property, plant, and equipment, separating especially depreciation, depletion, amortization, and provision for retirement.
3. The balance at the beginning of the period of report may be as per the accounts.

#### Schedule VII—Intangible assets (Note 1).—

COL A	COL B	COL C	COL D	COL E	COL F
Description (Note 2)	Balance at Beginning of Period (Note 3)	Additions at Cost — Describe (Note 4)	Deductions (Note 5)	Other Changes —Debit and/or Credit — Describe	Balance at Close of Period
—			(1)      (2) Charged to Profit and Loss or Income      Charged to Other Accounts —Describe		

**Note 1.** If in the accounts it is not practicable to separate intangible assets from property, plant, and equipment the information here required may be included in the schedule for property, plant, and equipment. In such event state in the balance sheet any known amount of intangibles so included with an indication that a further unknown amount of intangibles is also so included.

2. Show by major classifications, such as patents or good will. If such classification is not present or practicable, this may be stated in one amount. The additions included in column C shall, however, be segregated in accordance with an appropriate classification. Items of minor importance may be included under a miscellaneous caption.
3. The balance at the beginning of the period of report may be as per the accounts. If neither the total additions nor the total reductions during the period amount to more than 10 per cent of the closing balance and a statement to that effect is made, columns B, C, D, and E may be omitted by any company other than a public utility company. Any information required by Note 4 or 5 shall, however, be given and may be in summarized form.
4. If the changes in accounts in column C represent anything other than additions from acquisitions, state clearly the nature of the

**SUPPLEMENTARY INFORMATION**

changes and the other accounts affected. If cost of additions represents other than cash expenditures, explain. If acquired from an affiliate at other than cost to the affiliate, show such cost, provided the acquisition by the affiliate was within two years prior to the acquisition by the person for which the statement is filed.

5. If provision for depreciation and amortization of intangible assets is credited in the books directly to the intangible asset accounts, the amounts shall be stated in column D with explanations, including the accounts to which charged

**Schedule VIII—Reserves for depreciation and amortization of intangible assets (Note 1).—**

COL A Description (Note 2)	COL B Balance at Beginning of Period (Note 3)	COL C		COL D Deductions from Reserves— Describe	COL E Balance at Close of Period		
		Additions					
		(1) Charged to Profit and Loss or Income	(2) Charged to Other Accounts— Describe				
..							

**Note 1.** Insofar as amounts for depreciation and amortization are credited to the intangible asset accounts, such amounts shall be shown in the schedule of intangible assets, if there required

2. If practicable, reserves shall be shown to correspond with the classification in the related schedule of intangible assets
3. The balance at the beginning of the period of report may be as per the accounts

**Schedule XII—Reserves.—**

COL A Description (Note 1)	COL B Balance at Beginning of Period (Note 2)	COL C		COL D Deductions from Reserves— Describe	COL E Balance at Close of Period		
		Additions					
		(1) Charged to Profit and Loss or Income	(2) Charged to Other Accounts— Describe				
..							

**Note 1.** List, by major classes, all reserves not included in specific schedules. Identify each such class of reserves by descriptive title. Group (a) those reserves which are deducted in the balance sheet from the assets to which they apply and (b) those reserves which support the balance sheet caption **Reserves, not shown elsewhere**. Special contingency reserves may be grouped in one total. Reserves

as to which the additions, deductions, and balances were not significant may be grouped in one total and in such case the information called for under columns C and D need not be given.

**2 Except in the case of a bank holding or investment company,** the balance at the beginning of the period of report may be as per the accounts.

**Schedule XVI—Supplementary profit and loss information (Note 1).—**

COL A Item	COL B (NOTE 2)		COL C (NOTE 2)		COL D Total	
	Charged Directly to Profit and Loss		Charged to Other Accounts			
	(1) To Cost of Goods Sold (Rule 5-03-2A) or Operating Expenses (Rule 5-03-2B) (Note 3)	(2) Other	(1) Account	(2) Amount		
1 Maintenance and repairs						
2 Depreciation, depletion and amortization of fixed and intangible assets (or charges in lieu thereof)						
3 Taxes other than income and excess profits taxes (Note 4)						
4 Management and service contract fees						
5 Rents and royalties (Note 5)						

**Note 1.** State for each of the items noted in column A the total called for in column D and, if practicable, set forth the details called for in columns B and C.

2. Totals may be stated in the respective columns under column B without further designation of the accounts to which charged. If practicable, designate in column C the accounts to which charged.
3. Do not include in this column amounts deducted in the profit and loss statement under the caption **Other operating expenses** (Rule 5-03-3).
4. State separately each material item.
5. If the aggregate amount of rents and royalties is not material, a statement to that effect will suffice. State rents and royalties separately if either amount is material.

## SUPPLEMENTARY INFORMATION

**Schedule XVII—Income from Dividends—Equity in Net Profit and Loss of Affiliates.**

COL. A Name of Issuer and Title of Issue (Note 1)	COL. B Amount of Dividends (Note 2)		COL. C Amount of Equity in Net Profit and Loss for the Period (Notes 2 and 4)
	(1) Cash	(2) Other (Note 3)	
			(3) Total of Related Captions of Profit and Loss or Income Statement

**Note 1.** The shares of affiliates shall be listed as in the related schedules required for investments in securities of affiliates. Dividends from (1) marketable securities and (2) other security investments shall also be included, and may be shown in separate aggregate amounts: **Provided, however,** That securities held in issuers as to which securities representing exactly 50 per cent of the voting power are held directly or indirectly by the person for which the statement is filed and those representing the other 50 per cent are held by another single interest, shall be separately stated and are, within the group, to be listed separately as to each major investment, the balance to be stated in a single aggregate.

**2.** The information called for in columns B and C may be shown in total for each column for any two or more totally-held subsidiaries included in a consolidated statement.

**3.** State as to any dividends other than cash, the basis on which they have been taken up as income, and the justification, if any, for such action. If any such dividends received from affiliates have been credited to income in an amount differing from that charged to income or earned surplus by the disbursing company, state the amount of such difference and explain.

**4.** (a) The information required by column C need be furnished only (1) as to affiliates and (2) as to issuers securities of which representing exactly 50 per cent of the voting power are held directly or indirectly by the person for which the statement is filed and those representing the other 50 per cent are held by another single interest. If the answer required in column B is in the negative as to any particular person, the information called for in column C shall nevertheless be furnished.

(b) The equity in the net profit and loss of each person required to be listed separately shall be computed on an individual basis. In addition, there may be submitted the information required as computed on the basis of the statements of each such person and its subsidiaries consolidated.

**Rule 11-02. Statement of Surplus.**

1. *Balance at beginning of period.* (a) The balance at the beginning of the period of report may be as per the accounts. (b) If the schedule is filed as part of an annual or other periodic report and the balances at the beginning of the period differ from the closing balances, as filed for the previous fiscal period, state the difference and explain.
2. *Net income or loss (or net income or loss and special items) from profit and loss statement.*
3. *Other additions to surplus.* State separately any material amounts, indicating clearly the nature of the transactions out of which the items arose.
4. *Deductions from surplus other than dividends.* State separately any material amounts, indicating clearly the nature of the transactions out of which the items arose.
5. *Dividends.* For each class of shares state the amount per share and in the aggregate (a) *Cash* (b) *Other*—Specify.
6. *Balance at close of period* The balance at the close of the most recent period shall agree with the related balance sheet caption..



**Part II**

**ANALYSIS OF THE DIFFERENT TYPES  
OF BUSINESSES**



## **Introduction to Part II**

This second division of the book takes up the special problems and points of interest in the different classes of business enterprises. It will be noted that these different types fall into these three classes:

- I. Public Service Industries.
  - Railroads; Public Utilities.
- II. Industrials.
  - Mercantile and Manufacturing Concerns; Mines.
- III. Financial Corporations.
  - Commercial Banks; Insurance Companies; Holding Companies.

Although the varieties of businesses are not exhausted by this list, the cases studied are representative of the three kinds of businesses. This threefold grouping will be found significant not only to the businessman studying statements but also to the economist. The investment of the public service industries is largely in the form of fixed, service-rendering capital. The industrials, on the other hand, are interested in turning over commodities, and require considerable working capital. Financial corporations engage their capital in securities or credit instruments to earn interest and dividends. It should be noted that occasionally some holding companies are a mixture of operating and holding company.

The material presented in Part II should be particularly helpful in the study of investments, although it should also be useful in the concrete study of the various fields of business administration—transportation, public utilities, merchandising, banking, and insurance.



## CHAPTER XII

### Railroad Statements

#### The Study of the Income Account

**General interest of railroads.** Railroad statements are of interest for three reasons:

1. *Completeness of information.* Because the railroads furnish an unusual amount of financial and statistical data reported in a uniform manner, they are a rich source of material for study. Some of these will suggest analogous methods of study in other fields of lesser financial importance. In the field of air transportation, many very similar statistical and cost measures have been developed.

2. *Politico-economic importance.* Our railway lines, approximately 225,000 miles in extent, are our most important single trade highway, and, touching our economic life as they do at so many points, their proper regulation is a difficult problem. On the one hand, agricultural and industrial interests are ever seeking more favorable rates; on the other hand, the railroads demand a fair rate of return on their investment in order to maintain their plant in an efficient manner and to attract new capital for extensions and improvement. Equitable legislation and rate regulation require an intelligent appreciation of the information to be had from the earnings statements and balance sheets of the railroads.

3. *Investment importance.* Railroad securities constitute one of the most important classes of investments. The net amount of these securities held by the public in 1950 was as follows:

Capital Stock	\$ 6,980,000,000
Funded Debt	8,638,000,000
Total	\$15,618,000,000

These figures exclude considerable amounts of stocks and bonds held by the railroads in each others' systems and omits the substan-

tial investment of the stockholders in the form of retained earnings. The latter approaches the capital stock in amount.

The securities of railroads are very widely held. Besides those who own railroad securities directly, the majority of people have an indirect financial interest in the railroads, because our insurance companies and savings banks hold a very large part of all railroad bonds. Railroad bonds were until the 1930's the largest class of corporation bonds held by life insurance companies. Any financial disaster, therefore, to the railroads as a whole would affect practically everyone. This widespread economic interest is an important reason for the unusual financial aid extended to distressed railroads by Government agencies during the depression of the early 1930's.

**Sources of railroad data.** The Interstate Commerce Commission's *Statistics of Railways in the United States* furnishes the most detailed and comprehensive operating and financial statistics. The information about the individual railroads is accompanied by compilations prepared by the statisticians of the commission. The work is such that nearly two years elapse between the collection of these data and their final publication. However, the Commission publishes monthly reports of the earnings and expenses of the railroads and an annual statistical report of Class I roads; that is, roads with annual operating revenues in excess of \$1,000,000.

Sources more generally used are the publications of Moody, Standard and Poor's, and Fitch, which are used by investors and investment houses. *Moody's Manual of Investments* has a volume on railroads that, in addition to comparative statements, contains other pertinent data. Much valuable statistical and general information about the railroads as a whole appears in each of these volumes, which are published annually. Current financial information concerning the individual railroads that comes out between the yearly publications is released at frequent intervals in a loose-leaf supplement. The Standard and Poor's Corporation offers its *Standard Corporation Records*, which publish financial statements and news as rapidly as information becomes available. The Fitch Publishing Company also offers an investment information service.

The Bureau of Railway Economics, whose offices are at Washington, D. C., publishes reports of the monthly earnings of railroads and other miscellaneous matter. Its *Review of Railway Operations* each year is of particular interest. The Western Railways' Committee

on Public Relations at Chicago issues an annual number devoted to railroad statistics and a commentary on transportation problems. The United States Department of Commerce issues miscellaneous data on commerce and transportation.

**Uniform railroad accounts.** Railroads, like some other public service corporations coming under regulatory commissions, are obliged to keep their accounts under a uniform system and report accordingly. Although the original Interstate Commerce Act of 1887 gave the Interstate Commerce Commission the power to prescribe the accounts to be kept by railroad's doing an interstate business, it was found that insufficient power had been granted to enforce the provision. In spite of this handicap considerable progress toward uniformity was made through the cooperation of the Interstate Commerce Commission, the Association of American Railway Accounting Officers, and the National Association of Railway Commissioners of the States.

Under the Hepburn Act, the Commission in 1906 was given the necessary power, and on July 1, 1907, a uniform classification of accounts for all steam railroads engaged in interstate commerce was put into effect.<sup>1</sup> As a result, there has been available, since that date, uniform and intelligible information for investors, regulatory bodies, shippers, and the general public. In the industrial and mercantile field, there is nothing comparable to this system of uniform accounts.

**The Income Account.** The most generally read and widely circulated financial statement of the railroad is the Income Account. This statement is published in detail at the end of each year and is available in a partial and condensed form each month.

Study of the Income Account starts with the very condensed form of the statement, such as is shown in Exhibit A. The figures for this exhibit are taken from the railroad's reports published annually, of which Exhibit B is an example. The following discussion of the various items is, because of space limitations, necessarily confined to those that are significant; those that are unimportant, and certain others that are self-explanatory and require no particular attention, are not referred to. For more detailed analysis, certain supplementary

<sup>1</sup> This is known as the *Uniform System of Accounts for Steam Railroads* (in spite of widespread dieselization) and is an accounting classification governing "Investment in Road and Equipment, Operating Revenues and Operating Expenses, Income, Profit and Loss, and General Balance Sheet Accounts."

## EXHIBIT A

## NEW YORK CENTRAL RAILROAD COMPANY

## Long-Term Digest of Income Account,

Years Ended December 31

<i>Total Operating Revenue</i>	<i>Net Operating Revenue</i>	<i>Opér- ating Ratio</i>	<i>Non- operating Income†</i>	<i>Gross Income</i>	<i>Miscel- laneous Deductions</i>
\$ 806,952,379	\$ 118,260,970	85.34	\$ 22,426,193	\$ 63,044,949	\$ 2,080,022
1,59,684,769	126,836,509	83.30	25,701,137	63,733,685	1,791,353
697,304,399	100,266,092	85.62	21,662,753	54,525,358	2,121,643
779,860,755	112,517,789	85.57	21,343,098	59,105,264	1,804,909
1,947,703,340,528	96,803,670	86.24	20,699,701	45,736,955	1,911,941
616,784,755	58,433,262	90.33	16,527,819	32,477,176	1,987,705
1,940,370,545,875	91,870,895	75.21	17,586,375	61,714,706	1,466,768
1,938,298,681,195	61,178,612	79.52	14,622,226	30,244,705	1,168,298
1,933,283,341,102	75,417,508	73.38	21,387,448	54,791,300	584,538
1929†	590,008,623	148,763,030	74.78	34,132,014	137,577,461
					2,385,983

† As restated in 1930 report.

‡ Included in both "Nonoperating Income" and "Total Fixed Charges" are certain intercompany items between Company and its subsidiaries, the amounts of which are stated in original source.

## EXHIBIT A—(Continued)

## NEW YORK CENTRAL RAILROAD COMPANY

Long-Term Director Income Account,

Year Ended December 31

Year		Fees, Interest			Capital Stock		
		Total Fees, Charges, etc.	Total Interest Paid Less Charges, etc.	Net Income	Dividend, Declared (Amount)	Earn per sh	Div Decl per sh
	\$	\$	\$	\$	\$	\$	\$
1951	60,964,927	46,246,207	1,32	1,68	14,718,720	3,223,697	2,28
1950	61,942,332	43,627,162	1,42	1,50	18,315,170	6,447,394	2,84
1949	52,403,715	42,675,999	1,23	1,44	9,727,816	-	1,51
1948	" 300,355	42,325,9	1,35	1,69	11,727,096	3,223,697	2,28
1947	43,825,014	41,515,932	1,06	1,11	2,306,052	-	0,36
1946	30,509,471	40,955,739	0,71	0,51	d11,479,248	-	d1,62
1940	60,257,938	48,982,851	1,23	1,45	11,265,084	-	1,75
1938	29,076,407	49,230,764	0,59	0,20	d20,101,977	-	d3,18
1933	54,206,762	53,619,276	0,91	0,31	d5,12,514	-	d1,08
1929	135,491,478	58,062,894	2,33	3,92	77,428,584	37,090,532	16,88
							8,00

d = Deficit

\* Before certain appropriations of surplus

Source Standard and Poor's Corporation Descriptions

## EXHIBIT B

## NEW YORK CENTRAL RAILROAD COMPANY

## INCOME ACCOUNT FOR THE YEAR ENDED DECEMBER 31, 1951

Railway operating revenues	\$ 806,952,379
Railway operating expenses	688,691,409
<u>Net revenue from railway operations</u>	<u>\$118,260,970</u>
(Operating ratio—85 3/7%)	
Railway tax accruals (Note A)	60,088,555
<u>Railway operating income</u>	<u>\$ 58,172,415</u>
Equipment rents, net debit	13,865,996
Joint facility rents, net debit	4,256,485
<u>Net railway operating income</u>	<u>\$ 40,049,934</u>
Other income	
Revenues from Miscellaneous Operations	\$ 568,822
Income from Lease of Road and Equipment	209,549
Miscellaneous Rent Income	4 913,223
Income from Nonoperating Property	3,232,361
Separately Operated Properties—Profit	2 211,350
Dividend Income (Note B)	6,464,973
Interest Income	4 987,694
Income from Sinking and Other Reserve Funds	185 750
Release of Premiums on Funded Debt	726
Miscellaneous Income	221,168
<u>TOTAL OTHER INCOME</u>	<u>\$ 22 995,016</u>
Total income	<u>\$ 63 044,950</u>
Miscellaneous deductions from income:	
Expenses of Miscellaneous Operations	\$ 453 184
Taxes on Miscellaneous Operating Property	72,050
Miscellaneous Rents	363,605
Miscellaneous Tax Accruals	1,012 725
Miscellaneous Income Charges	178 456
<u>TOTAL MISCELLANEOUS DEDUCTIONS</u>	<u>\$ 2,080 023</u>
Income available for fixed charges	<u>\$ 60,964 927</u>
Fixed charges	
Rent for Leased Roads and Equipment	\$ 21,875,980
Interest on Funded Debt	23,499,392
Interest on Unfunded Debt	699 035
Amortization of Discount on Funded Debt	171 800
<u>TOTAL FIXED CHARGES</u>	<u>\$ 46,246,207</u>
Times fixed charges earned	<u>1 32</u>
Net income transferred to earned surplus	<u>\$ 14,718,720</u>

Note A—Includes Railroad Retirement and Unemployment taxes

Note B—Includes dividends of \$2,508,486 from subsidiaries not operated under lease  
Total equity of earnings in such subsidiaries were \$5,226,496.

## EXHIBIT B—(Continued)

## NEW YORK CENTRAL RAILROAD COMPANY

## STATEMENT OF EARNED SURPLUS—UNAPPROPRIATED

Credit balance at beginning of year	<u>\$302,011,062 76</u>
<b>Credits</b>	
Credit Balance Transferred from Income	\$ 14 718 720 46
Miscellaneous Credits (Note C)	1 457,167 17
<b>TOTAL CREDITS</b>	<b>\$ 16,175,887.63</b>
<b>Debits</b>	
Dividend Appropriations of Surplus	\$ 3,223 696 98
Surplus Appropriated for Investment in Physical Property	155,761 54
Miscellaneous Debits	760,036 15
<b>TOTAL DEBITS</b>	<b>\$ 4 139,494 67</b>
Credit balance at end of year	<u>\$314 047 455 72</u>

Note C—Includes \$1 114 968 67 representing gain from sale of land

schedules of details and traffic statistics, which will be described later, are also used.

**Gross operating revenue.** The operating revenues are those from transportation and from incidental sources related to transportation, such as the dining car income, rent of buildings used in the service of transportation, and the like. Sometimes a small amount of net gain or loss is reported for the operation of facilities connected with transportation and jointly operated with other railroads. A summary of the operating revenues of the New York Central Railroad for the year 1951 read as follows:

	Amount	Per Cent
Freight Revenue	\$585 948 301	72 6
Passenger Revenue	124 347 435	15 4
Mail Revenue	43 839 187	5 4
Express Revenue	8 531 268	1 1
Milk Revenue	1 230 697	.2
Switching Revenue	11 263 571	1 4
Other Trans. Revenue	786 702	.1
Non-Trans. Revenue Incidental and Joint I . . . t y	<u>31 055 218</u>	<u>3 8</u>
	<u>\$806 952 378</u>	<u>100 0</u>

**Revenue from freight.** In the study of freight revenue, the major source of income, three factors receive especial attention: traffic density, traffic stability, and the length of haul. A railroad may be compared to a mill grinding out services, like a mill, it can produce

only when there is grist to grind. Moreover, the interest on the plant and the cost of maintenance are fairly fixed, regardless of the production. (The ability of the railroads to control expenses and contract them on a large scale during the business decline after 1929 has been regarded as a remarkable achievement. Losses were heavy nevertheless, and the principle stated holds.) Added traffic means a lowering of the cost per unit of service until the railroad is used to capacity. Consequently, increased traffic density tends to increase operating profits.

To find the volume of freight traffic, the weight of the goods transported and the distance carried are used. The tons of freight carried are multiplied by the miles that the respective shipments are hauled. The sum of the products obtained, which is the total traffic volume, is spoken of as the *ton-miles* of transportation service for the period. The traffic density may be found by dividing the total ton-miles by the number of miles of railroad operated. The quotient is the measure of the railroad's production of freight services per unit of railroad plant—that is, per mile of road operated. Because traffic density does not consider the kind of goods carried, it is a crude measuring stick; but, for a given railroad, it serves to bring out major changes in the volume of business. Tonnage and not dollar volume is measured. The figure should not be overemphasized as between railroads, because low density may be balanced by carrying freight paying higher rates or by low investment in facilities.

**Commodities carried and traffic stability.** As the traffic density is studied for the volume, the commodity statistics are examined for the light they may throw on probable stability and future traffic trends. The following table of selected cases will serve to illustrate the important differences between the various types of railroads. In practically every instance, the proportion of mines tonnage is high, owing to the importance of coal. Just as the railroads have been likened to the arteries of the body, so the coal corresponds to the heat-producing elements in the blood which provide the necessary energy—in this case for the industrial organism.

The proportions for the New York Central are representative for a highly industrialized area. Over 40 per cent of all the tonnage is coal, chiefly bituminous. The detailed statement of the other various subgroups shows wide diversification. The next largest items are iron

ore, 6.1 per cent, and iron and steel manufactures, which latter when added to the raw products of the steel mill, pig iron, billets, blooms, rods, and slabs, total 5.7 per cent of tonnage carried.

The New Haven tonnage shows a high proportion of manufactures and merchandise, which is characteristic of the highly developed New England manufacturing region, located outside the area producing the raw materials. About one third of the mines tonnage was bituminous coal, which is used chiefly in manufacturing and gas production, and a large part (more than bituminous until recently) of the remainder of the mines tonnage was anthracite, which is favored for domestic fuel.

<i>Products</i>	<i>New York Central</i>	<i>New Haven</i>	<i>Bangor and Aroostook</i>	<i>Chesa- peake and Ohio</i>	<i>Kansas City Southern</i>	<i>Bur- lington</i>
Agriculture	63	85	296	3.2	74	210
Animals	13	28	00	0.5	13	66
Mines	587	277	128	77.5	289	184
Forests	24	47	239	2.3	127	64
Manufactures & Miscellaneous	303	534	333	16.1	494	431
All Less than Carload Lots						
Freight	09	29	04	0.5	03	45
	1000	1000	1000	1000	1000	1000

Source *Standard Corporation Records*

The Bangor & Aroostook, located in Maine, is interested primarily in the potato crop, which ordinarily makes up about one third of its tonnage and brings in more than one half of its gross revenues. Pulpwood and lumber are a large part of the forest products, and formerly were the largest tonnage items. The closely related item of paper is an important manufactured commodity.

The Chesapeake & Ohio is a soft coal road with about two thirds of its tonnage in this primary commodity. (Before its merger with the Pere Marquette, the figure was about four fifths.) The Kansas City Southern, located in the Southwest, shows a diversified tonnage. The large percentage of manufactures seems rather surprising in view of the small percentage of mine products until it is learned that a large amount of refined petroleum and petroleum products fall under the first classification. The Burlington is known as one of the "grain," or "granger," roads, although that term is not as applicable today

as formerly, owing to the greater diversity of traffic which now exists in this territory.

**Traffic stability.** The volume of traffic should not merely average high, but should show stability, in order to present the most desirable investment situation. As the result of mergers, the traffic of leading railroads has come to reflect the economic activity of certain large sections of the country in which they operate, so that they are now less subject to the more localized troubles of business. Exceptions, like the Bangor & Aroostook and the Chesapeake & Ohio, may enjoy especially profitable growth or stability, but are usually subject to a correspondingly greater hazard of loss. This risk offers one of the inducements for consolidations that will increase diversification of traffic. Railroad policy seeks diversification of traffic in order to minimize the chances of idleness in a bad year in any one branch of our economic life. Crop diversification has been valuable to the railroads as well as to the farmers in making for stability.

In this respect, the diversification of the industry of the territory served by the railroad is more important than the commodity diversification. Thus, if a railroad were confined to a small territory dominated by the motor industry, it would show not only the movement of traffic resulting from the carrying of such products, but also the inward movement of raw materials and of manufactures and food products that the population was able to purchase with its production. The study of commodities carried should concentrate, then, on the types of traffic originated in the territory; for with any failure of demand for these, the road will lose not only that business, but also the "imports" of raw materials, merchandise, and food that were made possible by the production. Thus, the inward movement of merchandise for the Bangor & Aroostook is conditioned by the success of the potato crop, the export of which gives the territory its buying power.

Stability that comes from traffic diversification will not be protection against cyclical movements in business. A depression that paralyzes all business inevitably affects the railroads because of their carriage of heavy producers' goods as well as consumption goods. The relatively uniform loss of revenues by most of the major railroads in the difficult years following 1929 is an indication of their wide diversification. Most of the major roads showed a decline in gross revenues very similar to the national average of 50 per cent.

The exceptions, in the direction of either greater stability or greater loss of revenue were characteristically the roads with a lack of diversification. The Bangor & Aroostook and the Chesapeake & Ohio were more stable showing gross revenue declines of but 27 and 24 per cent respectively in the 1929-1932 recession. The Pittsburgh & Lake Erie with a heavy concentration in coal, ore, and steel and iron tonnage registered a decline of 63 per cent.

**Average length of haul.** As between different hauls some will be more profitable than others. It is generally felt that long hauls represent especially desirable business in spite of lower rates per mile earned. Normally the longer hauls are made at a relatively lower cost because certain costs especially those incurred at the terminals are not affected by the distance of the shipment. The exceptional case where long hauls will be less profitable than short haul may exist when the long haul is between two points where competing transportation systems offer their rates abnormally. Another advantage of the long haul is natural competition with the truck the competitor is frequently lost to the latter. The wholesale method of handling traffic is dependent on the longer movements. To the extent that short haul business is becoming less profitable and has to be replaced by longer haul business the railroads need not look with unmixed regret upon such losses to the competing truck. Because of the greater profit in the long haul and the danger of losing short haul business the truck competition railroads with many railroads in most of the oil and other non-metalliferous business areas of the country sit tight. The Union Pacific is given as an example. New Haven represents the other extreme as it is shown in the following table of ratios reflected in various sections:

#### AVERAGE LENGTH OF FREIGHT HAUL

1929-1950

	1929	1930	1940	1950
Union Pacific	386	401	31	588
Northern Pac.	301	275	343	402
Southern Railway	182	186	210	215
New York Central	202	203	215	236
New Haven	110	131	136	156

The Interstate Commerce Commission's *Statistics of Railways in the United States* for the year ended December 31, 1950 states the

average haul of revenue freight for the railroads in the various districts to have been as follows:

	<i>Miles</i>
Eastern District	172 7
Southern District	223 7
Western District	312 1
Average for the United States	229 0

In calculating this average, the distance each shipment is carried is weighted by the tonnage, so that it represents the average number of miles which each ton of freight is carried on the given railroad. A particular shipment may travel on more than one railroad. If all roads were regarded as one system, the average haul in 1950 was 416 miles instead of the 229 miles per railroad shown in the table.

Just as long-haul traffic has been less vulnerable to truck competition than short-haul traffic, so also the full carload has been easier to hold than the less-than-carload-lot (L.C.L.) shipment.

**Revenue from passengers.** Freight revenue is the most important source of railroad income, but for many railroads, particularly in the densely populated Eastern states, the passenger revenue is important. An exceptional case is that of the New York, New Haven & Hartford, which, in 1950, showed 31.0 per cent of its gross operating revenues coming from this source. In 1921, its passenger revenues were almost as great as freight revenues.

#### NEW HAVEN OPERATING REVENUES FOR 1950

Freight Revenues	\$ 88,739,189
Passenger Revenues	46,680,517
Other Operating Revenues	15,345,279
Total	<hr/> \$150,764,985

Passenger transportation is a specialized type of transportation and tends to become very much more profitable as the volume of service grows. It requires special investment in the proper facilities, and involves special problems of management. Because of the fixed expenses that are not easily reduced when traffic declines, the passenger business has been particularly unprofitable since the advent of the private automobile and the bus. The passenger transportation calls for an expensive type of service. The requirements of an exacting time schedule, speed, consideration for the appearance of employees, and equipment call for special expenses. The necessity for

speed, for example, will demand special attention to the maintenance of the roadbed.

In 1920, the Interstate Commerce Commission provided rules for segregating freight and passenger service expenses, the results to be used as a form of analysis rather than as a part of the regular statements.<sup>2</sup> Because any division of those expenses that are common to both kinds of service must be somewhat arbitrary, its value has been regarded as theoretical, although possibly useful for shedding light on rate problems for the Commission. More exact information as to the relative costs of the different branches of transportation service might aid in a more scientific construction of rates. The data have had but little significance for the investor-analyst, except that they appear to bear out the opinion generally held that the freight business is more profitable than the passenger business. The combined figures for all of the leading railroads for the years 1927-1950 were reported as shown in the following table.<sup>3</sup>

#### PROFITABILITY OF FREIGHT AND PASSENGER SERVICE

CLASS I RAILROADS IN THE UNITED STATES (1927-1950)

(Millions of Dollars)

	1950	1946	1943	1940	1930	1927
Freight Revenues	\$8,071	\$5,974	\$6,966	\$3,647	\$4,214	\$4,791
Per Cent of Expenses to Revenues	66	79	62	63	68	70
Passenger Revenues*	\$1,394	\$1,644	\$2,078	\$ 635	\$1,067	\$1,346
Per Cent of Expenses to Revenues	124	100	65	123	101	90

\* Note that this title includes revenue from allied services, the expenses for which are not readily separated, for example, excess baggage and express shipments, that are hauled by passenger locomotives.

**Other operating revenues.** Revenues from mail and express business, as a rule, are shown separately, as being of special importance. Excess baggage, milk transportation, switching, water transfers, and the like may, when minor, be shown combined as "other transportation revenues." Other incidental revenues represent receipts from

<sup>2</sup> Interstate Commerce Commission, *Rules Governing the Separation of Operating Expenses between Freight Service and Passenger Service on Large Steam Railways* (1920). For the results of this analysis of expenses, see *Statistics of Railways in the United States*, published annually by the Commission.

<sup>3</sup> Compiled from Interstate Commerce Commission, *Statistics of Railways in the United States*.

In some instances, conservatively managed railroads formerly charged the cost of improvements and betterments to maintenance, instead of showing them as assets. Such accounting understated the value of the properties and the earnings for the period. On the other hand, such a practice put the railroad in a stronger position for the future. Under the uniform system of accounts prescribed by the Interstate Commerce Commission, deliberate misstatements of this sort, which fail to distinguish between expenditures for assets and those for maintenance, are no longer permitted.

Significant differences in maintenance are still to be found. They arise from differences in the character of the railroad and the traffic it carries, in managerial policies, and in the financial ability of the railroad to spend for upkeep.

**Variables in maintenance of way.** A fixed standard in terms of dollars for judging the adequacy of a road's maintenance is impractical. Even though efficiency is the same, the following factors will produce differences in the cost of maintenance, both between different periods for the same railroad and between different railroads for the same period:

1. Price differences.

- a. The scale of wages and prices of materials will fluctuate from year to year
- b. Cost of labor and construction material, such as ties and crushed stone, will vary in different sections of the country.

2. Character of the road.

- a. Traffic density. Between different railroads, greater density of traffic will increase the expense of maintenance.
- b. Number of tracks. Where there are extra tracks, there will be more maintenance required per mile of road.
- c. Character of traffic. High-grade traffic requiring speed in transportation will require a better roadbed than low-grade, slow-moving traffic.
- d. Location of road. The geography of the road may be of considerable importance, as in the case of the Northern roads subject to severe weather conditions. The cost of removing snow and ice is placed under the heading "Maintenance of Way and Structures."

**Maintenance of equipment.** Practice in respect to maintenance of equipment which, as in the case of maintenance of way, consists of repairs, depreciation, and retirements, is variable, chiefly because of the repairs and upkeep, expenditures for which fluctuate with business conditions. The relative importance of depreciation may be illustrated from the figures of the New York Central Railroad. In 1951, depreciation amounted to \$11,025,826 of the \$107,312,825 total for maintenance of way and structures; to \$25,436,667 of the \$159,-458,893 total for maintenance of equipment. Depreciation of way and structures in the form of buildings, bridges, signal systems, and similar properties was largely ignored until provision was made mandatory as of January 1, 1943. In contrast, a study of some leading railroads, as early as 1915-1917, showed equipment depreciation allowances at an average rate of 3.33 per cent (of cost) per year.<sup>5</sup> However, rates in the past, before they were prescribed by the Commission, were variable as between railroads and from year to year.<sup>6</sup> This average of 3 $\frac{1}{3}$  per cent for equipment would approximate the rates usually found in recent years.

During World War II and after Korea, railroads were permitted to amortize purchases of equipment and structure properly certified as defense projects more rapidly than ordinary depreciation for income tax purposes. Especially large charges were made in 1945 when at the end of the war any balance not fully amortized was charged off. A peculiarity of the amortization for income tax purposes in the years after Korea was that the Commission permitted the railroads to show only ordinary depreciation in their published income statements.

Retirement expense, included under the heading of maintenance in the same way as depreciation, formerly reflected any losses at the

<sup>5</sup> *I.C.C. Reports*, Vol. 177, p. 471 *et seq.* Tables given in this report show the practice by years for 16 large railroads for the period 1915-1917. The total accrued depreciation is shown for the years 1914-1930. The highest accumulation was for the Chicago, Burlington & Quincy—52.1 per cent—and the lowest for the Missouri Pacific—15.6 per cent. Additional detailed figures for a longer list of roads appear in Vol. 168, p. 398 *et seq.*

<sup>6</sup> *I.C.C. Reports*, Vol. 177 (July, 1931), p. 363. Rates for equipment depreciation were found from 0.5 per cent to 6 per cent of cost. The New York Central decreased its depreciation of equipment from \$13,979,000 in 1932 to \$6,440,000 in 1933, although its repairs rose from \$36,868,000 to \$39,704,000. This reduction in depreciation of \$7,539,000 contributed substantially toward the reduction in the deficit in net income from \$18,327,000 in 1932 to \$5,413,000 in 1933.

time equipment was retired. The loss was the book value (cost less accrued depreciation) remaining at the time of retirement, less any amount recovered from the disposal of the scrap. Today, retirement expense includes only the cost of tearing down and recovering salvage from retired equipment, and occasionally, by special permission of the Commission, the amortization of extraordinary retirements. Under the "group plan" of accounting for depreciation, the allowance is for the group of similar units rather than individual items and the full cost of any retired unit is charged to the reserve (Accrued Depreciation—Equipment) whether or not it has attained the estimated average service life.

The most common method of studying maintenance—partly, at least, because it is the simplest—is to compare it with gross revenues (See above for percentage analysis based on total operating expenses.) The total maintenance in normal years has tended to run about 33 per cent of revenues.<sup>7</sup> The actual percentages for all Class I railroads' combined figures are shown in the following table (Class I roads are those with annual gross operating revenues of over \$1,000,-000.)

From 1922 to 1929, the total ratio fell by slow degrees as a result of the equipment element. The factors making a lower maintenance of equipment ratio possible were (1) increasing traffic especially in the earlier years, (2) improved condition of the equipment, that is, a cleaning up of maintenance deferred in the hard years at the beginning of the period, and (3) increased efficiency. The increasing prosperity of the railroads in these years is reflected in the tendency for the maintenance of way per cent to increase slightly. When conditions grew bad after 1929 this expense was contracted even more rapidly than gross revenues declined. Although equipment was neglected, as indicated by the increasing amount in need of repair, the

<sup>7</sup> The chief variations appear among the lesser roads. Thus the Pittsburgh & Lake Erie generally had a ratio in excess of 40 per cent. Its figures show  
(Millions of Dollars)

	1929	1932	1940	1950
Gross Revenues	\$34,135	\$12,521	\$23,917	\$41,835
Maintenance of Way	4,064	1,002	1,905	1,774
Maintenance of Equipment	11,924	4,446	8,178	10,917
Total	\$15,988	\$ 5,448	\$10,083	\$15,691
Ratio	46.9%	42.9%	42.1%	37.5%

per cent spent on its maintenance rose slightly, but not enough to offset the slashes made on the sums spent for upkeep of way and structures. In general, maintenance expenditures are more subject to managerial control, at least over the short run, than are transportation expenses, of the two classes of maintenance, that of way and structure is the more controllable.

#### MAINTENANCE RATIOS FOR ALL CLASS I RAILROADS IN THE UNITED STATES

(Based on Combined Operating Figures—Percentages of Gross Revenues)

Year	Total Maintenance %	Maintenance of Way, %	Maintenance of Equipment %
1925	33.91	13.31	10.57
1929	32.77	13.62	19.15
1933	29.75	10.11	19.31
1937	31.71	11.40	19.54
1940	30.68	11.57	19.06
1942	26.86	10.67	16.22
1945	30.97	15.53	21.12
1946	31.31	15.08	19.26
1948	21.55	13.91	17.61
1949	23.69	11.96	18.73
1950	21.62	13.9	18.03

Partial recovery is seen in the rise in maintenance as business picked up between 1933 and 1937. By 1940 revenues had risen so much that even the increased maintenance was a slightly lower percentage of revenues than in 1937. During World War II traffic and revenues mounted so much more rapidly than expenses that the maintenance ratio had dropped to 27 per cent after which maintenance of way was 66 per cent higher in dollars than in 1940 and maintenance of equipment 48 per cent higher. At the end of the war in 1945, the maintenance percentage was boosted unusually high to a 40 per cent ratio by the inclusion of the amortization of assets acquired for the defense effort not written off before that year. Subsequent percentages in the table represent what would be regarded as more "normal" maintenance ratios.

Another method of maintenance study is that on a "per mile of road operated" basis. The operated, rather than the owned, mileage is used because the Income account shows the results for the former. The New York Central Railroad illustrates the importance of the

point, for it owns but 3,600 of the 10,700 miles that it operates—the balance being mostly leased, but with some operated under other contracts, as for trackage rights. The table on page 335 shows average figures for some of the leading railroads grouped according to the territory served.

The geographical factor and the closely related character-of-traffic factor show their influence in the marked differences among the several groups of roads shown. Within each group, the influence of volume and value of traffic, chiefly the former, can generally be seen. One indirect method of allowing for the traffic density factor that is particularly appropriate for maintenance of way is to recognize the differences in "miles of road operated" that arise from extra trackage. A mile of road that has been double-tracked will require more expenditure than a single-track line. Inasmuch as the extra track does not result in doubling the expense, it has been suggested that additional main track be treated as 0.8 of a mile of first main track, and all other track, but excluding all trackage rights, be treated as 0.5 of a mile. By dividing the maintenance of way by the resulting total of "equated track miles," figures more comparable than the simpler per mile of road figures are obtained.

Sometimes the maintenance of way is checked further by studying the number of ties replaced and miles of track relaid each year.<sup>8</sup> The analysis of such data is complicated by such variables as the type of ties used (creosoted vs. untreated and type of wood), geographical differences in weather, the weight of rail laid, and variations in traffic burden and consequent wear. Statement and statistical analysis is sometimes supplemented by a field survey of the railroad's property.<sup>9</sup>

Detailed study of the maintenance of equipment may be made by comparing the expense for each class of equipment—locomotives, freight cars, and passenger cars—with the amount of use given it. Utilization is measured by the distances that the equipment moves.

<sup>8</sup> A convenient summary of maintenance averages may be studied in the "Analytical Survey of Railroads" (blue section) published annually in *Moody's Manual of Investments, Railroads*. Data are reported for such items as cross ties replaced per equated track mile, rail replacements per mile of track, and cost figures, such as repairs per freight car and per freight locomotive.

<sup>9</sup> Points checked and the values of field inspection are given by David A. Hill, "Plant and Management in the Appraisal of Railroad Securities," *Analysts Journal*, First Quarter, 1946, p. 37.

**MAINTENANCE MEASURES OF SOME LEADING RAILROADS IN  
THE UNITED STATES  
4-YEAR AVERAGES, 1947-1950**

(Compiled from *Moody's Manual of Investments—1951*)

	<i>Maintenance of Way Per Equated Track Mile</i>	<i>Maintenance of Equipment Per Mile of Road</i>	<i>Maintenance to Gross Revenues Way</i>	<i>Maintenance to Gross Revenues Equipment</i>
<b>Eastern Trunk Lines.</b>				
Pennsylvania	\$6,111	\$10,939	\$20,646	12.0%
New York Central	5,469	9,102	13,984	13.3
Erie	4,784	8,522	11,821	11.8
Baltimore and Ohio	5,259	7,713	12,743	12.5
<b>Coal Roads.</b>				
Delaware, Lackawanna and Western <sup>a</sup>	6,158	10,421	13,987	12.1
Reading <sup>a</sup>	7,562	14,136	17,467	15.9
Lehigh Valley <sup>a</sup>	4,669	8,138	9,974	13.9
Norfolk and Western <sup>b</sup>	6,446	10,608	15,125	13.7
Chesapeake and Ohio <sup>b</sup>	6,038 <sup>c</sup>	8,522	11,284	14.3
<b>Central</b>				
Illinois Central	4,741	6,406	6,713	16.2
Wabash	4,896	5,763	5,451	13.7
Chicago and North Western	2,763	3,462	4,245	15.2
Chicago Burlington & Quincy	3,287	3,962	3,869	15.1
Chicago, Rock Island & Pacific	2,684	3,105	3,773	12.8
<b>Southern.</b>				
Louisville and Nashville	4,359	5,675	8,378	14.0
Southern	4,027	4,917	9,505	13.7
Atlantic Coast Line	3,507	4,337	4,156	18.4
Seaboard Air Line	3,999	4,777	5,465	15.6
<b>South Central</b>				
Kansas City Southern	3,420	3,995	5,330	9.2
Missouri Pacific	—	4,593	4,899	15.9
Missouri, Kansas and Texas	3,040	3,378	3,252	14.5
<b>Southwestern Transcontinental</b>				
Atchison, Topeka & Santa Fe (System)	4,315	5,452	6,850	14.8
Southern Pacific (System)	5,382	5,532	8,156	11.8
<b>Northwestern Transcontinental.</b>				
Union Pacific (System)	4,796	6,062	7,603	13.9
Chicago, Milwaukee, St. Paul & Pacific	2,965	3,474	4,047	15.2
Northern Pacific	3,076	3,812	4,067	17.2
Great Northern	3,813	4,402	4,117	14.7

a "Anthracite" Roads.

b "Bituminous" Roads.

c Includes Père Marquette after June, 1947.

Thus, a locomotive traveling one hundred miles gives one hundred locomotive-miles of usage. The total maintenance of locomotives—including repairs, depreciation, and retirements—is divided by the locomotive-miles of service to obtain that expense on a "per locomotive-mile" basis. Similarly, the maintenance of the other equipment on a "per freight-car-mile" and a "per passenger-car-mile" basis gives figures that cover the other two major classes. Maintenance of equipment may also be studied per unit of equipment, thus, maintenance per freight car as well as per freight car mile. Comparison of such figures from year to year and among railroads in the same territory is often fruitful.

One check upon the adequacy of the equipment maintenance is the reported condition of the various classes of rolling stock. The railroad reports what part of the equipment is in good order and what part is in need of repairs. When neglect is present, the percentage of unserviceable equipment will rise to an unhealthy extent. Although the change in percentage is the significant thing, any increase in unserviceable locomotives or freight cars to a figure in excess of the averages in the normal years, such as that shown in the table below, should lead to a careful check. When traffic is greatly depressed, such unserviceable equipment may be unused and so may not interfere with the quality of service, but it does show an accumulation of deferred maintenance to burden the expenses in subsequent years. If not cared for, the road may be forced to spend unusually large amounts for care of equipment.

#### EQUIPMENT CONDITION OF CLASS I RAILROADS 1921-1950

##### PERCENTAGES OF UNSERVICEABLE FREIGHT EQUIPMENT

	1921	1925	1927	1930	1935	1940
Locomotives	24.0	17.5	16.1	17.5	33.6	24.8
Cars	13.2	7.7	5.9	6.2	14.0	7.8
	1945	1946	1947	1948	1949	1950
Locomotives	13.4	16.7	16.2	15.7	17.7	20.1
Cars	3.1	3.0	4.0	4.4	6.1	6.1

Ordinarily, the percentages for the less numerous passenger locomotives are very similar to those for freight locomotives.

**Operating ratio.** The ratio of operating expenses to operating revenues is known as the "operating ratio." This percentage is sometimes regarded as the measure of operating efficiency, but this notion

is hardly correct. A high ratio may be the result of external conditions entirely beyond the control of the management—as when the roads are given a schedule of inadequate rates by the regulating commission, or when they suffer from business depression. The latter causes revenues to fall, but the railroads may find a corresponding reduction of expenses impossible because of certain more or less fixed expenses which do not vary readily with the volume of traffic. The operating ratio may be more properly regarded as a rough indicator of the varying profitableness of the traffic, and as such it is very important to the investor. The relation to profitability is a loose one because the ratio is calculated before *all* taxes and not only the income tax, as is customary in other fields. Equipment and joint facility rents are also excluded from the ratio even though, as we shall see shortly, they are in part of the nature of operating expense. Then, too, if gross revenues shrink very much, net earnings will drop to an unprofitable level even though a normal operating ratio is maintained. An analysis of the maintenance is also necessary to determine whether the operating ratio is fairly stated or not.

There is no absolute standard for the operating ratio, although 70 per cent is regarded as "normal." Roads with a higher ratio usually are not earning a satisfactory return; when the ratio is lower, the situation is likely to be excellent. In spite of its inadequacies, the interrelation of the operating ratio and rate of earnings on investment (railroad property less accrued depreciation plus materials, supplies and cash) are reflected in the following figures, which also show the major importance of revenue fluctuations. Between 1929

#### OPERATING RATIOS, RATE OF RETURN, AND GROSS REVENUES OF CLASS I RAILROADS IN SELECTED YEARS

	1929	1940	1942	1949	1950	1951
Operating ratio—per cent	71.7	71.9	61.6	80.3	74.5	77.4
Return on net investment—per cent	5.24	2.94	6.34	2.86	4.23	3.09
Gross revenues—millions of dollars	6,280	4,297	7,467	8,580	9,473	10,391

and 1940, the railroads lost almost a third of their gross revenues so that in spite of similar operating ratios (72 per cent), their earnings return dropped from 5 1/4 to slightly under 3 per cent. War traffic and high revenues two years later brought down the operating ratio by ten points to 62 per cent and more than doubled the rate of return, lifting it to 6.3 per cent, the highest return in decades in spite of high

war taxes. Price inflation raised both expenses and revenues subsequently, especially after the end of the war. The years 1949, 1950 and 1951 showed operating ratios in excess of 70 per cent and a return that was decidedly low, 29, 42 and 37 per cent, respectively.

To complete the analysis of the operating ratio, it is customary to study the chief elements: the maintenance ratio previously discussed and the transportation ratio, which is the ratio of transportation expenses to revenues. The latter is regarded as a more significant measure of operating efficiency than the operating ratio itself. The significance of the operating ratio is judged not only in its relation to that of railroads generally but also as to whether the maintenance element appears unusually high or low.

Furthermore, the study of operations is incomplete until the percentages of revenues consumed by taxes and by equipment and joint facility rents have been measured, and the per cent of "net operating income" to revenues examined.

**Taxes.** In the customary statement, the taxes are typically reported as a single amount after the "net revenue from railway operations" (see New York Central illustration above). Study would be facilitated if the practice in other fields of placing taxes other than income taxes among the operating expenses and reporting the important income taxes separately were followed. The former taxes are relatively fixed; the latter fluctuate with earnings. The increased importance of taxes warrants this segregation and study. In 1929, total taxes were 6 per cent of revenues. In 1941, for the first time in railroad history, they exceeded 10 per cent. Under heavy war-time rates, they reached 20 per cent in 1943 and were slightly under 13 per cent in 1950, when the Korean conflict brought a reimposition of high Federal income tax rates.<sup>10</sup> The railroads, like the utilities, are supposed to be regulated so as to permit a "fair return" upon their capital investment. (The position of the latter is stated more precisely in Chapter XIV.) Consequently, from the railroad's viewpoint, the income tax is no different from any other tax. It is merely one more deduction, and railroad rates are supposed to be so adjusted

<sup>10</sup> The relative importance of taxes as seen by the railroads is presented in *Railway Taxation* by the Bureau of Railway Economics (Special Series No. 61, 1931). The subsequent record of taxes may be traced in *Statistics of Railways in the United States*. For the significance of taxes see P. R. Bretey, "The Impact of Taxes," *Analysts Journal*, First Quarter, 1951, pp. 31-33.

as to permit this tax to be covered and leave a balance that will amount to the fair return. Actually, in recent years, the force of competing transportation agencies and political pressure have prevented adequate rate adjustments.

**Equipment and joint facility rents.** Hire of equipment results from charges between companies for the use of equipment—a natural result of freight shipments originating on one road and ending on another—and payments to individuals and companies for the use of private equipment.<sup>11</sup> Joint facility rents are paid and received for the use of trackage, yards, bridges, and stations owned by one railroad and used by another.

The position of these rentals after the operating section reflects a recognition that they are of a mixed economic nature. To a substantial extent they represent a payment for the use of capital goods and so resemble the capital return items that follow, such as interest. On the other hand, the rental paid covers certain operating costs, such as depreciation and maintenance, which are borne by the owner (lessee). An arbitrary allocation of a fixed proportion of these rents to the operating expenses and the balance to the fixed charges has been suggested for analytical purposes. Two objections to any such theoretical allocation may be advanced: (1) the exact proportions for correct allocation are uncertain and undoubtedly vary in different situations, and (2) no part of the equipment rent is a fixed charge because it is a wholly variable expense depending upon the number of freight cars and the time they are traveling on the lessee company's line. An excessive amount of hire of equipment expense may reflect an inadequate investment in rolling stock.

**Other income.** The "other income" or nonoperating income, consists of rents, dividends, interest, and sometimes profits from non-transportation property. The chief investments are generally in the stocks and bonds of other railroads, particularly the former. Such holdings may create closer working relations or create a holding company-subsidiary relationship. In many cases, the whole stock of the subsidiary is owned, thus making the subsidiary wholly subject to the control of the parent company—under which circum-

<sup>11</sup>: Rent for equipment acquired upon leasing a whole railroad is included under "Rent for Leased Roads"; rentals to the extent that they represent interest upon equipment obligations issued to acquire rolling stock are included under "Interest on Funded Debt."

stances the actual net profit or loss of the subsidiary is a much better measure of the profitableness of the property than are the dividends received.

Moreover, when the subsidiary is separately operated, the element of control makes it possible for the owning corporation to change its dividend policy or even the earnings. The amount of the earnings may be the result of a traffic agreement that arbitrarily divides the rate charged on through traffic that is carried over both the subsidiary's and parent company's lines. It might also be pointed out that control of a small road may be purchased for the sake of the traffic it will bring to the system, even though such a feeder line may show a continued loss. The loss represents the cost of securing the additional traffic, and should be shown in the reports of the parent company as one of the losses of the period—a result which may be had by making a consolidated report of the operation of the system as a whole. In 1950, the Interstate Commerce Commission required railroads to publish supplemental consolidated as well as the ordinary corporate reports. (The technique of the consolidated report is explained in Chapter XIX, "Holding Companies." Because comparable figures on the more useful consolidated basis are lacking for earlier years, the ordinary corporation figures are used here for statement illustration, except as noted.)

The relative importance of operating and other income for the New York Central in 1951 is apparent from the following figures:

#### COMPARISON OF OPERATING AND OTHER INCOME

(Millions of Dollars)

	<i>Corporate</i>	<i>Consolidated</i>
Net railway operating income	40 0	58 7
Other income	20 9	12 5
	<hr/> <hr/> 60 9	<hr/> <hr/> 71 2

The consolidated figures show less "Other Income" by eliminating any interest and dividends received from subsidiaries; by combining their operations with those of the New York Central, operating income shows total earnings and not merely dividends or other cash income received. In order to determine the full earning power behind common stocks other than those included in the consolidated figures, it would be necessary to study the earnings of companies in which a substantial equity might exist in earnings not received as dividends.

The investments of the New York Central Railroad fall into three classes: (a) miscellaneous physical property, (b) investments in affiliated railroad companies, chiefly stock but also including bonds, unsecured notes, and advances, and (c) investments, stocks of non-affiliated railroad companies. For the New York Central, miscellaneous physical property consists largely of real estate, such as its New York Central Building and an investment in the Waldorf-Astoria, Biltmore, Roosevelt, and Commodore Hotels in New York City to which it has leased air rights over portions of its subterranean tracks in that city. Other roads own hotels, oil wells, and mining property.

New York Central's most important holdings in affiliated railroad companies are those in the Cleveland, Cincinnati, Chicago and St. Louis Railway, the Michigan Central Railroad, and the Pittsburgh & Lake Erie Railroad. Often in such cases the holding company will have leased the property of the subsidiary and so become the guarantor of the interest and dividends upon the latter's securities. Thus, such dividends will appear under nonoperating income and also under rents for leased roads, a deduction from income. No such duplicate items appear in the New York Central statement for the Michigan Central and the Cleveland, Cincinnati, Chicago and St. Louis dividends, because their leases specifically provide that rent shall cover only dividends on stock not held by the lessee (i.e., N. Y. Central). Such intercompany transactions are eliminated in the consolidated statement.

The chief nonaffiliated stock investment in this case is a block of \$13,145,000 of common and \$21,855,000 of first and second preferred in the Reading Company. This stock represents a 25 per cent interest; 42 per cent is owned by the Baltimore and Ohio. Stocks of this sort in independently operated railroads, whether owned directly or through the medium of an investment company, are clearly the ones that require analysis. The dividends they pay may, and during good years often do, fail to reflect actual earning power. They constitute hidden earning power, as it were. At other times, their dividends may exceed earnings and conceal declining earnings from the eye of the superficial reader.

Other railroads showing a substantial proportion of nonoperating income are the Pennsylvania, the Union Pacific, the Canadian Pacific, the Northern Pacific, and the Great Northern.

**Deductions from income.** The present practice is to subtract from the sum of the net railway operating income and any other income, the "miscellaneous deductions from income" in order to throw into clear relief the balance available for interest and other fixed charges. (Income taxes, it will be noted, have been deducted earlier in spite of its calculation on the balance after interest.) These miscellaneous deductions, usually minor, consist of expenses incurred in the earning of nonoperating income (some will have been deducted directly from such income) and any losses on separately operated properties. The fixed charges are the fixed costs of securing capital, including rent for leased roads, and interest and amortization of discount on funded debt. By paying rent for leased roads, the company saves so much money that would otherwise have to be paid out in interest and dividends on security issues of its own. Interest on funded debt will be much the most important, and often the only important, fixed charge for most railroads. It represents payments to bondholders that can be met only if the surplus of revenues up to this point is sufficient. The threat of receivership, however, will ordinarily force the management to cut even such a necessary item as maintenance and stretch their finances to the limit in order to avoid default. The funded debt includes the total par value of unmatured debt, maturing in more than one year from date of issue which is in negotiable form, except for equipment obligations, which are shown separately but treated as funded or long-term debt. Funded debt is ordinarily synonymous with bonded debt.<sup>12</sup> It does not include long-term debt in nonnegotiable form, such as amounts owing to affiliated companies and ordinary real estate mortgages.

The better measure of bond protection is "times fixed charges earned" rather than "times interest earned." Where the latter figure is calculated, the interest is divided into the balance available for fixed charges minus the rentals. Whether bond interest will be a weaker claim than rent, as implied by this calculation, or rank on a parity or be superior will depend on the relative value of the rented property as compared with any property securing the bonds. Debt strength should be measured by the total fixed charge burden.

When income bonds exist with a claim contingent upon there being sufficient earnings to pay their claim, their position is measured by

<sup>12</sup> See the I.C.C. *Uniform System of Accounts for Steam Railroads* (Account No. 755, Funded Debt Unmatured).

a separate calculation in which the combined fixed and contingent charges are divided into the amount available for fixed charges.

When the priority of the various fixed charge claims can be determined, the coverage for each layer or class of debt can be measured. In the following illustration, three groups were assumed. In the first order of priority were the equipment obligations, which experience has shown are paid their return even when roads are insolvent; in the second, the interest on the mortgage bonds and the rent of certain leased lines that are deemed to be equally secure, and in the third, the interest on the general mortgage income bonds.

Average Income Available for Fixed Charges (average for 5 most recent years or longer)	<u>\$4 000 000</u>
Charges	
Interest on Equipment Obligations	\$ 400,000
Fixed Interest on First Mortgage Bonds & Rentals on Leased Road	1,600,000
Total Fixed Charges	\$2,000,000
Contingent Interest on General Mortgage Income Bonds	1 000,000
Total Fixed & Contingent Charges	<u>\$3 000,000</u>

In this illustration the coverage for the equipment obligations is 100 times, for the first mortgage bonds and lease rentals, 20 times; for the contingent interest income bonds, 133 times.

The New York Central is an example of a railroad with complex debt and lease arrangements that make a "times fixed charges earned" a more appropriate measuring stick of safety than "times interest earned." The fixed charges figure used is the sum of (1) rent for leased roads and equipment, (2) interest and amortization of discount on funded debt, and (3) interest on unfunded debt. The last item is usually included as a precaution, because it generally indicates a sale of securities whenever it is substantial and any large amount of unfunded debt would be regarded as unsafe for a railroad. Computed on this basis, the "times fixed charges earned" for the New York Central in 1951 was 132 ( $60,964,927 - 46,246,207$ ), as against a "times (funded debt) interest earned" of 168 ( $38,389,912 - 23,671,192$ ), in which latter computation the rents and unfunded debt interest are subtracted from available income as though prior charges. The former figure is the more generally used measure but is not wholly satisfactory in this particular case because the fixed charges include some of the rents that the company pays to itself.

because of its lease of the railroads whose securities it holds, as indicated in the footnote to the Income Account. The elimination of these intercompany transactions would eliminate a substantial fraction of the rental charges and of the nonoperating income. The 1951 consolidated income account for New York Central, making these eliminations, shows fixed charges earned 1.63 times ( $71,207,057 \div 43,595,418$ ). The increased income was attributable to subsidiary earnings not included in the regular corporate earnings.

In studying individual issues, the procedure suggested in the hypothetical illustration on page 343 would be followed. Rentals of strongly situated and profitable roads would be regarded as prior, just as would the interest on a bond with a prior mortgage on good property. Each of the numerous liens and leases need not be measured, but all may be put into a few large groups likely to obtain substantially similar treatment in the event of reorganization, and the coverage, or "times earned," computed for each group.

Ignored by these conventional measures of coverage is the sometimes important burden of principal payments on serial maturities used extensively for financing equipment. The low rate of interest paid on these issues makes that cost less than the burden of principal repayments. A common practice is to compare this latter burden with the depreciation allowances.<sup>11</sup> Such "replacement money" could be employed in depression years for debt retirement if earnings were sufficient to cover interest and other fixed charges. Once a railroad ceases to add to this form of debt, its amount shrinks fairly rapidly as serial maturities run the debt off. Some roads built up a substantial equipment debt after 1945, but a few have gradually returned to a basis of financing new equipment wholly out of current income.

**Net income.** The net income, which is the balance remaining after the deduction of fixed and contingent interest charges, is usually spoken of as the "amount available for dividends." It is the balance available for dividends on any preferred stock. The computation of the number of times the combined preferred dividends and fixed charges have been earned gives a measure that makes it possible to

<sup>11</sup> Such a comparison for leading railroads and other information on this form of financing are given by John Stevenson, "Railroad Equipment Financing," *Analysts Journal*, Third Quarter, 1951, pp. 11-14; C. B. Campbell, "Maturities of Equipment Obligations versus Equipment Depreciation," *Analysts Journal*, Third Quarter, 1951, pp. 41-42.

compare the coverage of the preferred stock with that of junior bonds. The balance remaining for the common stock after the prescribed dividend on the preferred stock has been deducted is usually stated as so many dollars earned per share.

Some railroads may show an item "income applied to sinking fund" or some other reserve or fund under the heading of contingent charges along with any income bond interest. Such appropriations may be required by the terms of a reorganization plan. Such a deduction will reduce the reported net income and sometimes the earnings per share are reported on this reduced basis. It is better practice to add back such deductions before calculating the stockholders' earnings because they represent retained earnings. As has been seen earlier, there are many factors that may prevent the distribution of net income as dividends.

Differences in stability of the net income for the stockholders for different railroads will vary chiefly with traffic stability, with the nature and importance of nonoperating income, and the relative size of the fixed charges. Where these other factors are not too different, a quick measure of probable stability may be studied in the net income margin. The varying level of net income left over as compared with gross revenues can be seen in the following figures:

**MARGIN OF NET INCOME BEFORE SURPLUS  
RESERVES TO GROSS REVENUES**

1921-1929 (average)	10.8%
1930-1939 (average)	1.3
1940-1945 (average)	8.1
1946-1950 (average)	6.2
1949	5.2
1950	8.4

In spite of the fact that freight traffic and revenues in the peacetime years of the 1940's surpassed the highest levels reached in the 1920's, and debt was considerably reduced, the margin left for stockholders was much less satisfactory. In interpreting these percentages as a measure of stability, however, the increased importance of income taxes must be remembered. Such taxes, unlike operating expenses, tend to vary directly with net income.

**Surplus statement.** As in other fields of business a separate section or surplus statement (see New York Central illustration) may supplement the income statement to show (1) dividends declared,

(2) "appropriations of surplus" for debt retirement or investment in fixed property, and (3) occasional unusual gains and losses, especially where they are not properly a part of the current year's operations. The practice of locking up surplus in special accounts as special surplus reserves or as appropriated surplus is common among railroads.

Aside from the surplus appropriations, the general policy of a railroad directorate may be to retain the earnings rather than to disburse them to the stockholders. The railroads generally have retained a large part of their earnings for improvements and expansion. From the standpoint of securing funds, this reinvestment of earnings has been the equivalent of selling small blocks of stock, and in other respects has probably been superior to such a procedure. As shown in the final figures, the New York Central has retained a total of \$314,047,456 as Earned Surplus—Unappropriated, which, exclusive of other surplus, is equal to 56 per cent of the stated value of the outstanding capital stock.

**Supplementary statistics.** As has already been shown in this chapter, the income statement is supplemented by certain required statistical information that aids in analysis. The general purpose of this material is to disclose weakness or strength that will develop unfavorably or favorably for the investor in future operations. The chief of these statistical data studied are the commodity statistics, coal or other fuel consumption figures, and certain other material bearing upon operating efficiency, such as traffic density and train movements. The commodity statistics have already been discussed. The amount of fuel consumed "per thousand gross ton-miles" of traffic moved is an index of economy for one of the important elements of railroad operating expense.

**Ton-miles per train-mile.** "Railroad transportation consists essentially of buying train mileage and selling ton-miles and passenger-miles." <sup>14</sup> This statement is based on the fact that the expenditures for labor and supplies per train-mile do not vary greatly with the variation in the number of cars hauled, which has been one

<sup>14</sup> A. M. Sakolski, *American Railroad Economics* (New York: The Macmillan Co., 1913), p. 152. The same principle was developed earlier in Thomas F. Woodlock's *The Anatomy of a Railroad Report and Ton-Mile Cost* (New York: Doubleday, Page & Co., 1900), pp. 68-73 and 104-105.

of the reasons for the ever-growing use of heavier locomotives. An increase in the volume of traffic handled does not ordinarily require a proportionate increase in train-miles, so that, other things being equal, the railroad is most efficient which can show the highest proportion of ton-miles to train-miles.

Briefly, the factors which may vary the trainload are:

1. Traffic density
- 2 Proportion of local to through freight.
- 3 Grade and curvature of roadbed
- 4 Efficiency in loading
- 5 Efficiency of equipment employed

Whenever traffic density is low, a railroad is not justified in using such heavy equipment or such long trains as it otherwise would. In order to give proper service, it is essential that it be reasonably prompt. An attempt to assemble too long trains might interfere with speed in getting the train under way and giving the shipper reasonable service. The character of traffic will be an indirect influence, as it affects traffic density. Coal being heavier than wheat, a coal road can show heavier tonnage than a grain road, but the apparent advantage will be offset by the higher rates paid by the latter commodity.

Inasmuch as local freight is handled in relatively smaller carloads than is through freight, a large proportion of the former class of traffic will reduce the "average tons per loaded-car-mile" and, in turn, the average trainload.

Difficult grades and considerable curvature increase the labor of hauling and reduce the hauling capacity of the locomotives, consequently cutting down the size of the average trainload. Grades and curvature are largely settled once a railroad is built, although occasionally important improvements are made.<sup>15</sup>

Efficiency in loading is a factor which can be improved by a management capable of enlisting the co-operation of shippers in loading cars more nearly to capacity. The efficiency of the equipment, on the

<sup>15</sup> An example is the Natron Cut-Off of the Southern Pacific between Springfield Junction, Oregon, and Weed, California, which shortened the distance between San Francisco and Portland by approximately 20 miles and provided a route over the Cascade Range with grades of 95 feet to the mile, where the old route over the Siskiyou Range had grades of 174 feet to the mile.

other hand, is partly a matter of securing equipment with a capacity suitable to the needs of the road, and partly a matter of adequate maintenance. Trainload performance should be examined if there appears to be inadequate maintenance of equipment—particularly of locomotives, because poorly maintained locomotives may cause a reduction in the size of trains.

The statistics of a railroad will show the pertinent factors with reference to traffic and loading, examples of which, drawn from the report of the New York Central, are shown below.

	1940	1951	Increase
Revenue Freight Carried (Millions of tons)	136.5	176.8	30%
Revenue Freight Carried One Mile (millions)	\$29,308	\$40,902	40
Length of Haul (average miles each revenue ton was carried)	214.6	231.4	8
Traffic Density (ton-miles per mile of road operated)	2,695,596	3,831,324	42
Average Revenue per Ton of Freight	\$1.98	\$3.31	67
Average Revenue per Ton-Mile	0.92¢	1.43¢	55
Average Revenue per Freight Train-Mile	\$7.80	\$16.33	169

#### *Loading Figures*

Average Loaded Cars per Train	33.0	36.9	12
Average Empty Cars per Train	22.5	21.4	-5
Per Cent of Loaded to Total Car-Mile	59.5	63.3	6
Car Loading (revenue ton-miles per loaded car-mile)	25.66	30.85	20
Average Trainload (ton-miles of revenue freight per train-mile)	846	1140	35

The first two figures, showing freight traffic in terms of tonnage and of ton-miles, reflect the expansion in business activity between 1940 and 1951 resulting from business boom, increased population and productivity, and the stimulation of the conflict in Korea to the defense effort. Ton-miles of freight service rose 40 per cent as compared with a 30 per cent increase in revenue-paying tonnage loaded. The difference represents the longer average haul, which rose from 214.6 to 231.4 miles.

Because the New York Central, like other roads, decreased the number of miles operated during this period by disposing of a small amount of unprofitable road, the traffic density rose at a slightly faster rate than ton-miles, 42 as compared with 40 per cent.

Higher freight rates are clearly indicated by the 55 per cent rise in freight revenue per ton-mile. Where the New York Central hauled a ton of freight at an average charge of less than one cent per mile, 9 mills, in 1940, it charged 14 cents in 1951. This increase was less, however, than the general rise in the price level. Sometimes over a period of years the average rate per ton will change as a result of changing character of the traffic. In general, since 1920 the railroads have been losing high-rate, short-haul traffic.

The longer average haul made it possible for the New York Central to increase its revenue more per ton of freight carried than it did per ton-mile, 67 per cent as compared with 55 per cent. That the traffic increase was turned to good advantage is seen in the still larger percentage increase in revenue per freight train-mile of 109 per cent. How the trainload was increased to make this possible is found in the loading figures shown in the table. The explanation is found in both an increase in the number of loaded cars per train and an increase in the load per car so that the average trainload rose from 846 to 1,140 tons, an increase of 35 per cent. The figures show that on the average the New York Central added four loaded cars per train (33.0 to 36.9 loaded cars) and cut off one empty (22.5 to 21.4 empty cars) so as to push the average freight train from 55.5 to 58.3 cars. The average load per freight car was boosted from 25.66 to 30.85 tons of revenue-producing freight, an increase of 20 per cent.

Efficiency in train operation can also be studied in average train speeds. Speed affects both service to the shipper and costs of operation. The end measure of speed statistics is the number of net ton-miles per train hour of operation. The influence of increased speed on train operating costs is reduced by the practice of paying many transportation employees on a mileage rather than an hourly basis.

A comparison of income results in 1940 and 1951 shows how little these efficiency gains and freight rate increases benefited the stockholders. The following comparison of major items shows that operating expenses, which mean chiefly wages of operating employees, absorbed \$410 of the \$436 million increase in revenues. The modest rise of \$3.4 million in the net income of the stockholder can be largely associated with the reduction in fixed charges resulting from retained earnings used for debt reduction. Fixed charges were reduced from \$49.0 to \$41.0 million between 1940 and 1946 but rose again to \$46.2

by 1951. A considerable part of the latter increase can be traced to the financing of the equipment modernization in the postwar period.

(Millions of Dollars)

	1940	1951	Increase
Gross Revenues	370.5	807.0	436.5
Operating Expenses	278.7	688.7	410.0
Taxes	58.4	60.1	1.7
Available for Fixed Charges	60.2	61.0	8
Fixed Charges	49.0	46.2	2.8 (decrease)
Net Income	11.3	14.7	3.4
Earned per Share	\$ 1.75	\$ 2.28	

**Analyzing operating expenses.** Traffic statistics as an aid in the analysis of operating expenses are usually limited in their application to the item of maintenance. When the distances traveled by the equipment are known, it is possible to calculate the maintenance of locomotives—for example, on a per-mile-run basis. In some instances it may be necessary to allow for varying conditions attributable to differences in type of equipment of the several roads and to changes from year to year in the cost of labor and material.

One of the most interesting examples of maintenance analysis is Professor Cole's study of the Atchison, Topeka & Santa Fe Railroad between the date of its reorganization in 1889 and its bankruptcy in 1893. The case illustrates how the elements described in this chapter may be drawn together to show the operating efficiency and the degree to which a proper maintenance policy is being pursued. In this instance the study reveals, first, that the maintenance was inadequate—which is indicated by comparisons made with similar roads—and second, that the inadequacy of the equipment was evidenced by the decline in operating efficiency.<sup>16</sup>

The figures were as follows:

	Gross Earnings per Mile	Net Earnings per Mile	Percentage Operating Ratio
1890 . . . . .	\$4,335	\$1,472	68
1891 . . . . .	4,733	1,353	75
1892 . . . . .	5,114	1,576	70
1893 . . . . .	5,523	1,699	69

<sup>16</sup> Wm. M. Cole, *Accounts, Their Construction and Interpretation* (Boston: Houghton, Mifflin Co., 1915), pp. 230-239.

	<i>Maintenance of Way per Mile</i>		<i>Maintenance of Equipment per Mile Run</i>		
			<i>Locomotives</i>	<i>Passenger Cars</i>	<i>Freight Cars</i>
1890 .....	\$633	\$0.043	\$0.0059	\$0.0043	
1891 .....	717	0.050	0.0071	0.0047	
1892 .....	645	0.055	0.0097	0.0055	
1893 .....	741	0.052	0.0090	0.0059	

An analysis of the operating expenses shows an undue increase as compared with the increase in business.

#### INCREASES IN 1891

	<i>Per Cent</i>
Gross Earnings	8
Ton-Miles	$4\frac{1}{4}$
Cost of Labor for Transportation (\$4,300,000 to \$5,400,000)	24
Cost of Fuel (\$2,400,000 to \$2,800,000)	15

However, the increase cannot be explained by wage increases or increased cost of fuel alone. The other causes are:

- ..
- 1. The average trainload fell  $7\frac{1}{2}$  per cent in 1891.
- 2. Locomotives were driven farther, but freight cars traveled a shorter average distance
- 3. Earnings per train-mile decreased.
- 4. Expenses per train-mile increased.

These facts would indicate poor economy in management, in contrast to the fairly steady increase of gross and net earnings on a per-mile basis. Professor Cole states the case in regard to the maintenance, and so, the incorrectness of the net earnings, as follows:

Rails cannot ordinarily be counted upon to last more than twenty years; a road should, therefore, relay about one twentieth (or more) of its line each year. The Atchison took three years to relay one twentieth (1891, 152 miles; 1892, 193 miles; 1893, 118 miles). The Southern Pacific, in the same years that the Atchison was spending an average of \$684 per mile for maintenance, was spending an average of \$1,083, and it "is not then as now accumulating a large reserve for betterments. The average for the Northern Pacific, the Southern Pacific, and the Union Pacific, combined, was for three years \$982. The figures for maintenance of equipment are also extremely low. The average American maintenance for locomotives is about seven cents per mile run; for freight cars, six mills. The figures for the Atchison show locomotive maintenance wholly inadequate, and car maintenance adequate only in the last

two of the four years. Does this explain why the loads were light and the expense of hauling heavy in 1891?

**Summary.** From the foregoing discussion of the railroad income statement, it is apparent that much can be learned by comparing the individual railroad's record from year to year and with the corresponding figures for similarly situated roads.<sup>17</sup> Averages should not be set up as standards of performance, or they will be more misleading than helpful. Differences in operating conditions make it unfair to compare the operations of railroads in different parts of the country. Again, changes in the price level from year to year make it impossible to say that so much should be spent for a given thing, such as maintenance of equipment per mile run, even when a single railroad is being studied.

To summarize, the chief points to be covered in analyzing the income statement will be:

1. *Operating revenues.* The revenues are the joint result of volume and rates. The former will be studied for the light that may be thrown upon future trends and stability. Rate changes are significant in relation to changes in operating costs.

2. *Operating expenses.* These expenses are watched in relation to revenues, through the operating ratio. Because maintenance is the most readily varied by management, it is subjected to the most thorough scrutiny for the revelations that it may furnish relative to actual, as distinguished from reported, earning power and the condition of facilities for rendering efficient service.

3. *Nonoperating income.* The relative importance of outside income is noted and then examined to see to what extent it represents the actual and potential income of property underlying the most important securities.

4. *Income deductions.* The fixed charges, consisting mostly of rents and bond interest, are compared with the total result of the preceding items—the total income less miscellaneous deductions from income. The "times earned" figures offer a statistical measure of the strength of the company, which must be interpreted in the light of

<sup>17</sup> Comparative data for leading railroads may be found conveniently assembled in two studies in the *Analysts' Journal*: (1) "Significant Operating and Financial Data of Leading Railroads," Third Quarter, 1951, pp. 68-69; Pierre R. Bretey, "The Value of Railroad Securities," Fourth Quarter, 1949, pp. 34-39.

the analysis of details of the preceding sections of the income statement

5 *Net earnings and dividends* The position of any preferred stock is measured after the manner of a junior bond. Inasmuch as the common stock is the claimant to the residuum, all the qualifications and tendencies discovered in the analysis register upon its earnings.

## CHAPTER XIII

### Railroad Statements (Continued)

#### The Balance Sheet

**Introductory.** The balance sheet of a railroad is unique in form and is usually of less importance than the Income account. As a practical matter, much time should not ordinarily be spent on the detailed points of the balance sheet. The nature and meaning of the chief items should be studied, however, lest, as so often happens, emphasis be wrongly placed.

The general form of the balance sheet is as follows:

<i>Assets</i>	<i>Liabilities</i>
Investments	Stock
Current Assets	Long-Term Debt
Deferred Assets	Current Liabilities
Unadjusted Debits	Deferred Liabilities
	Unadjusted Credits
	Surplus

The terms for the headings of the subdivisions of the railroad balance sheet do not all have the same meaning as they have in other fields. Investments, deferred assets and liabilities, and unadjusted debits and credits will have to be defined as they are used by the railroads. Moreover, the order of the items is distinctive.

The balance sheet may be studied concretely by using the slightly condensed statement published in the 1951 report of the New York Central Railroad. Ordinarily, it is advantageous to compare the balance sheet with the balance sheets of previous years, but limitations of space prevent such a comparison here.

**Investments.** "Investments" in the railroad balance sheet includes all the fixed, or capital, assets of the company both (1) the physical property directly owned and used for transportation service, and (2) its outside investments. The first consists chiefly of road and equipment, but also includes improvements on leased railway property;

the second, of nonoperating fixed assets, which are (1) miscellaneous physical property; that is, mines, hotels, commercial power plants, and real estate not used for transportation; (2) stocks, bonds, notes, and advances, shown as "Investments in Affiliated Companies"; and sometimes (3) other investments. Illustrations of all are found in the balance sheet of the New York Central Railroad. For those who are interested in tracing the "investments" historically, it should be noted that some roads report the additions to the road and equipment during the year in a separate schedule, a practice which permits an analysis of the additions from year to year.<sup>1</sup>

The equipment acquired under trust agreement should be shown apart from that which is owned outright without encumbrance as in this balance sheet. When equipment is purchased on this plan, its legal title rests in a trustee in order to secure the equipment trust certificates that are sold to pay for the equipment. The down payment has varied but has usually been about 20 per cent in recent years, where formerly 25 per cent. The certificates sold to finance the balance have serial maturities usually over a 15-year period but not infrequently for less. The certificates are highly regarded as investments, payments usually being maintained even by bankrupt roads, and are a cheap method of financing equipment purchases. Sometimes conditional sales arrangements have been used as by the New York Central for some of its financing. In the typical conditional sale, title to the goods does not pass to the buyer until he has completed the installment payments. This form of financial arrangement is ordinarily used by railroads where the equipment purchases are being financed by a commercial bank.

To determine the net book value of the road and equipment, the amount of the "accrued depreciation" is subtracted. (This title, more accurately descriptive than "reserve for depreciation," has been used for many years by the railroads.) The amounts accrued for the de-

<sup>1</sup> From 1911 to 1914 inclusive the Road and Equipment, or property, account of the railroads was divided under two headings—the first read "Investments to 1907," and the second showed the separate amounts of road and equipment acquired since that date.

Investments prior to 1907 were not recorded under the strict accounting classification inaugurated by the Interstate Commerce Commission in the year 1907. In some cases, the Asset account had been charged with fictitious amounts, including such things as abandoned property, discounts on bonds, and other items without asset value. Often road and equipment were not even shown as separate amounts in the reports of companies which followed this loose practice.

**THE NEW YORK CENTRAL RAILROAD COMPANY**  
**CONDENSED GENERAL BALANCE SHEET**  
**December 31, 1951**

**Assets**

<b>Investments:</b>		
Investment in Road .....		\$ 747,993,770
Investment in Equipment:		
Owned .....		334,014,245
Trust and Conditional Sales .....		362,940,867
Improvements on Leased Property .....		132,015,493
Acquisition Adjustment (deduct) .....		839,212
Donations and Grants (deduct) .....		2,239,479
		<u>\$1,573,885,684</u>
Investment in Transportation Property .....		
Accrued Depreciation and Amortization-Road .....	\$ 91,905,683	
Accrued Depreciation and Amortization-Equip. ....	<u>316,214,446</u>	408,120,129
		<u>\$1,165,765,555</u>
Investment in Transportation Property (net) .....		8,949,287
Capital and Reserve Funds .....		
Miscellaneous Physical Property .....	\$ 55,765,471	
Less Accrued Depreciation .....	<u>22,138,253</u>	33,627,218
Investments in Affiliated Companies* (Note A) .....		408,540,166
Other Investments* (Note A) .....		42,346,550
		<u>\$1,659,228,776</u>
Total Investments .....		
<b>Current Assets:</b>		
Cash .....		\$ 33,582,181
Temporary Cash Investments .....		15,72,319
Special Deposits .....		2,619,759
Net Receivable from Agents and Conductors .....		17,580,287
Miscellaneous Accounts Receivable .....		37,296,971
Material and Supplies .....		73,022,833
Interest and Dividends Receivable .....		1,644,527
Accrued Accounts Receivable .....		14,885,553
Other Current Assets .....		719,982
		<u>\$ 196,524,413</u>
Total Current Assets .....		
<b>Deferred Assets:</b>		
Working Fund Advances .....		\$ 301,903
Insurance and Other Funds .....		2,098,915
Other Deferred Assets .....		2,889,613
		<u>\$ 5,290,431</u>
Total Deferred Assets .....		
<b>Unadjusted Debits:</b>		
Prepayments .....		\$ 271,792
Discount on Funded Debt .....		780,703
Other Unadjusted Debits .....		3,653,243
		<u>4,705,739</u>
Total Unadjusted Debits .....		
Total .....		<u><u>\$1,865,749,360</u></u>

\* Greater detail in original balance sheet.

Note A.—Carried at cost, or less.

This balance sheet does not include the assets or liabilities of lessor, affiliated, terminal, or other companies, nor the liability of The New York Central Railroad Company as guarantor or under leases or otherwise with respect to the securities or obligations of such companies.

**THE NEW YORK CENTRAL RAILROAD COMPANY**

***Liabilities***

**Stock**

Capital Stock (6,447,410 shares without par value)	\$ 1562,332,426
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**Long-Term Debt**

Funded Debt Unmatured *	\$ 469,728,000
Equipment Obligations	206,077,035
Amounts Payable to Affiliated Companies	45 638,000
Total Long-Term Debt	<u>\$ 721,443,044</u>
Total Capitalization	<u>\$1,283,775,470</u>

**Current Liabilities**

Traffic and Car-Service Balances	\$ 8,289,179
Audited Accounts and Wages Payable	43,553,394
Miscellaneous Accounts Payable	17,537,885
Interest Matured Unpaid	3 251,739
Dividends Matured Unpaid	146,806
Unmatured Interest Accrued	5 449,990
Unmatured Dividends Declared	3,223,697
Accrued Accounts Payable	24,172,107
Taxes Accrued	23,515,178
Other Current Liabilities	13,518,483
<b>** Total Current Liabilities</b>	<u>\$ 142,658,459</u>

**Deferred Liabilities**

Liability to Boston and Albany Railroad Company	\$ 4,216,763
Other Deferred Liabilities (Note C)	<u>30,384,356</u>
<b>Total Deferred Liabilities</b>	<u>\$ 34,601,119</u>

**Unadjusted Credits**

Insurance Reserves	\$ 5,767,473
Other Unadjusted Credits (Note D)	29,700,699
Accrued Depreciation—Leased Property	46,852,436
<b>Total Unadjusted Credits</b>	<u>\$ 82,320,608</u>

**Surplus**

Unearned Surplus	\$ 50 182
Earned Surplus—Appropriated	8,296 065
Earned Surplus—Unappropriated	314 047,456
<b>Total Surplus</b>	<u>\$ 322 393,703</u>

\$1,865,749,360

\* Greater detail in original balance sheet

Note C—Includes

Amounts payable to New York State as the New York Central proportion  
of certain grade crossing eliminations

\$24,713,782

Conditional sale agreements for signals and other roadway and yard  
equipment

605,636

Note D—Includes Accruals for injuries to persons and loss and  
damage—freight

\$21,689,052

## RAILROAD STATEMENTS

preciation of road are small. To the extent that this asset consists of roadbed, corresponding to land, this practice of reporting maintenance with low depreciation charges is understandable. Even the allowances for equipment depreciation appear to be small when compared with rates used for industrial equipment.<sup>2</sup> Freight cars and locomotives have a relatively long life. The accumulation of accrued depreciation shown by New York Central in its illustrative balance sheet may be compared with the figures for all Class I railroads (1950):

(Millions of Dollars)

	<i>New York Central</i>			<i>Class I Roads</i>		
<i>Asset</i>	<i>Accrued Amount</i>	<i>Per depreciation *</i>	<i>cent</i>	<i>Accrued Amount</i>	<i>Per depreciation *</i>	<i>cent</i>
Road . .	\$748	\$ 92	12.3	\$15,228	\$1,185	7.7
Equipment	697	316	45.3	9,331	5,035	53.9

\* Includes accrued amortization of defense projects.

The accrued depreciation for road is appreciably higher for New York Central (12 per cent) than for the average of all roads (8 per cent); depreciation for equipment considerably less (45 per cent vs. 54 per cent). However, the consolidated New York Central figures for its whole operating system, showing road depreciation of 9 per cent and equipment depreciation of 53 per cent, come close to the Class I averages. The investment in road and in equipment are nearly equal in the case of New York Central; the road investment for all roads is almost two thirds larger than their equipment investment. A railroad like the New York Central that leases the whole property of other roads may come to supply a substantial part of equipment used on the lessors' lines. Such a practice will tend to raise the ratio of equipment to road investment for the lessee railroad above average. Something of this sort appears to be the case here where the proportions of road and equipment shown in the consolidated balance sheet, which includes the assets of the subsidiaries whose properties the New York Central leases, approach those of all railroads. This similarity may be seen in the following figures:

	<i>New York Central</i>	<i>All</i>
	<i>Corporate</i>	<i>Roads</i>
	<i>Consolidated</i>	
Road . . . . .	52%	62%
Equipment . . . . .	48	38
	<hr/> <hr/> 100%	<hr/> <hr/> 100%

<sup>2</sup> See above, page 331.

After a period of price inflation, the greater tendency to replace equipment as compared with road will tend to increase the book value of the equipment relative to that of the road.

When an acquisition adjustment is shown as a subtraction (credit) from the railroad asset, it indicates the purchase of property from another road at more than its book value. The latter is preserved on the books of the purchaser and the excess shown in this subtraction account, which will be eliminated when, and if, the asset is later retired.

Assets acquired by donation or gift are recorded; but instead of showing the amount of the gift as a part of donated surplus or other net worth, the amount is shown on the balance sheet as a subtraction from the asset. The purpose is to let the asset reflect such donated assets but have a net plant figure that excludes donated amounts upon which no earnings return is allowed by the regulatory commission.

Where the stocks are owned in subsidiaries, such as the Michigan Central and the Cleveland, Cincinnati, Chicago and St. Louis (Big Four) in the case of the New York Central, special study is no longer required now that consolidated statements have to be published to supplement the regular corporate income statement such as is illustrated here. Such a statement reflects the full earnings of the equity in such subsidiaries instead of only the dividend income reported in the ordinary corporate statement.

The nonoperating investments in affiliated and other companies can be studied in detail, because a list of such investments is usually given elsewhere in the annual report. Sometimes the investments consist of securities of known companies, which issue statements of their own, as does the Reading Company, in which the New York Central has substantial stockholdings. Their analysis is ordinarily made in connection with the study of their earning power for the income statement.

Where securities of this sort are pledged for a specific debt, the balance sheet will show them as pledged. This would be the case with securities pledged to secure collateral trust bonds. Like pledged equipment, they would not be available for the general unsecured creditors in the event of insolvency.

**Working capital.** The current assets and current liabilities will normally require no individual attention, and a detailed discussion

of them may be omitted. The major values are in the fixed section of the balance sheet, and even a moderate working capital deficit is not looked upon with concern if earnings are satisfactory and the security market normal. When earnings are but little more than enough to cover fixed charges, a weak working capital position is likely to reflect potential insolvency. Loans and bills payable are frequently present in such cases, showing that temporary financial aid is being extended.

The severe effects of the depression beginning in 1930 may be appreciated from the fact that on July 31, 1932, railroad working capital showed a deficit for the first time in the reported history for the combined figures of Class I railways. The course of this decline is shown in the following figures:

**COMBINED WORKING CAPITAL OF ALL CLASS I RAILWAYS IN  
THE UNITED STATES**

(Millions of Dollars)

<i>As of Dec. 31</i>	<i>Current Assets</i>	<i>Current Liabilities *</i>	<i>Working Capital</i>
1929	\$1,718	\$1,201	\$ 517
1930	1,511	1,162	349
1931	1,213	1,147	66
1932	1,063	1,131	68d
1933	1,035	1,261	226d
1940	1,442	926	516
1945	4,346	2,108	2,238
1950	3,758	2,227	1,532

\* Excludes tax liability before 1941

d = Deficit.

Care must be used in interpreting such combined working capital figures because of changing Commission rules on accounting. Not until after January 1, 1941, was the tax liability placed under current liabilities. Prior to that date this accrual was classified under unadjusted credits. During the 1920's, when bankruptcies were on the rise, current liabilities became swollen by the inclusion of defaulted bonds and their accumulated interest. After 1939, defaulted bonds (Funded Debt Matured Unpaid) was shifted back under Long-term Debt and the interest (Interest Matured Unpaid) reclassified as a deferred liability.

Many receiverships were prevented during the 1930's by the Re-

construction Finance Corporation, which, owned and financed by the Federal Government, made loans to railroads in distress for interest, taxes, and refunding when acceptable security was available. The net amount owing at the end of 1933 was \$337,000,000. As of December 31, 1940, the RFC and the PWA, which extended loans for capital purposes, had made total loans of \$987,579,305. The conservatism with which the loans were made is evidenced by the fact that, although a third of the railroads did become insolvent, the great bulk of these loans was subsequently repaid.

An illustration of deteriorating working capital leading up to trouble may be had from the statements of the Seaboard Air Line Railway Company. It went into the hands of a receiver December 23, 1930. The receivership became inevitable as a result of the decline in earnings in spite of a sale of common stock underwritten on October 11, 1929, and executed in January of 1930, which resulted in the realization of over \$20,000,000. In view of poor earnings, as shown by the low coverage of fixed charges stated in the table below, the financing was unusual. The additional funds explain the temporary reduction in the working capital deficit shown in the table below.

#### SEABOARD AIR LINE RAILWAY COMPANY

##### STATEMENT OF WORKING CAPITAL, INTEREST CHARGES, AND THE NUMBER OF TIMES FIXED CHARGES WERE EARNED

(Thousands of Dollars)

<i>As of Dec 31</i>	<i>Current Assets</i>	<i>Current Liabilities</i>	<i>Working Capital</i>	<i>Fixed Charges</i>	<i>No. of Times Earned</i>
1927	14,401	14,428	27(d)	11,290	1.11
1928	14,703	15,566	863(d)	11,235	1.11
1929	12,919	18,985	6,067(d)	11,126	1.09
1930	12,180	14,170	1,990(d)	11,376	0.50

(d) Working capital deficit

When earnings are declining or absent, it is likely that working capital will suffer. This condition is often checked by the neglect of maintenance or the reduction of dividends. The study of maintenance to determine its adequacy should be particularly close when general conditions appear unfavorable. A policy of inadequate maintenance is the simplest method of conserving cash reserves, and at the same time it reduces the apparent operating expenses.

During a period of high earnings, it may be found that working capital does not apparently increase proportionately. Unlike the industrial corporation, the railroad has no need for increasing investment in receivables or inventories. Expansion takes the form of increased road and equipment or the purchase of securities of affiliated roads or enterprises. Sometimes funded debt is retired, especially in the form of small serial maturities of equipment obligations. In the prosperous decade of the 1940's, the railroads, chastened by the troubles of the 1930's, retained an unusual proportion of earnings to reduce long-term debt. Because of the low estate of railroad credit after 1930, retained earnings rather than stock sales have also supplied needed equity capital. After debt has been reduced to a conservative standard and asset needs are cared for, earnings are more likely to be distributed as dividends than used to create a large working capital. The accumulation of working capital during the war period, 1940-1945, shown in the table, was exceptional in this respect. It represented preparation for possible troubles and for replacement of assets that could not be obtained during the war.

When temporary investments in the form of United States obligations are found among the current assets, they may represent holdings to care for Federal income taxes, which an industrial corporation might deduct from that liability. Occasionally, marketable securities not required for current needs will appear under the heading of "Other Investments" instead of as current assets.<sup>3</sup>

The payment of dividends is closely watched for its effect on working capital! A strong temptation exists to continue dividends even when their disbursement is most unwise. On some occasions, it is true, the best procedure is to use past earnings to continue a well-considered dividend policy if working capital permits, for regularity of dividends is a factor that will strengthen the credit of a railroad. The fact that dividends are being paid is stressed by bond houses as evidence that interest charges will be met. In some jurisdictions, a dividend record has been required in order that a bond might retain a "legal" status for fiduciaries and regulated financial institutions

<sup>3</sup> Thus, the Chicago and North Western had \$26.8 million of United States Government bonds at the end of 1948 not included among current assets. Although set aside as capital and equipment amortization reserve funds, their use in that way would set free so much cash derived from earnings that would normally be devoted to those purposes.

such as savings banks and life insurance companies.\* Even in the absence of such a requirement, the dividend record will affect credit standing.

The desirability of an uninterrupted dividend record suggests that during years of good times working capital should be increased with a view to continuing dividends during the periods of dullness that alternate with prosperous times. In fact, railroad earnings have fallen so greatly in recent years that the goal for many has become the conservation of working capital in order to maintain bare solvency in depression years.

**Deferred assets.** The deferred assets of a railroad consist of working funds, insurance funds, and other funds. The title "Deferred Assets" in the balance sheet of a railroad consequently has a meaning different from that in statements of other kinds of business. It includes funds that are likely to be employed for meeting items of an expense nature. Thus, "working funds" consists of advances made to officers and employees, to be accounted for as expenditures are made. Sinking funds, however, are investments to meet funded debt and so appear in the investments section of the balance sheet.

**Unadjusted debits.** Unadjusted debits are miscellaneous items that cannot properly be included under the previous headings. They include prepaid expense items, discount on stocks and bonds issued, suspense items to be added later to some asset or expense, and contingent assets. A perusal of the items appearing in the general balance sheet at the beginning of this chapter shows some of these items. For the most part, they are minor amounts which in other fields would be classified as Deferred Charges.

When the company has securities of its own that have been issued but are now held in the treasury or are used as collateral for other issues, the item is in the nature of a memorandum and will not be added into the total assets. It will be offset by similar memorandum items on the liability side. The New York Central shows no such items in our illustrative balance sheet but does report them in a supporting detailed schedule of funded debt. They may represent

\* Such legal requirements explain why the Baltimore & Ohio continued its dividends during a period when its earnings did not justify that course. This railroad fell short of earning the dividend of 5 per cent which it paid in 1917. It reduced the rate in 1918, but continued to pay dividends at the rate of 4 per cent per annum into the year 1919.

either repurchased obligations or issues available under the terms of an open-end mortgage. They can be useful for the market value at which they might be sold or used to secure a collateral note or bond issue.

**Deferred liabilities.** The deferred liabilities in the case of railroads are ordinarily of very minor importance, consisting of unusual liabilities, sometimes of indefinite maturity. When funds are held by the company's treasurer in the administration of employees' pension, savings, relief, or other association funds, or when certain percentages due contractors are retained to be paid on the completion of contracts, the liability is shown under this caption. In the illustrative balance sheet, the "Other Deferred Liabilities," as stated in a footnote, consists chiefly of "Amounts Payable to New York State" as the New York Central's share of certain grade crossing eliminations. In this case, the deferred liabilities might well be grouped with the long-term debt for analytical purposes.

**Unadjusted credits.** The unadjusted credits, on the liability side of the balance sheet, are a miscellaneous group of items. Tax liability is a current liability but prior to January 1, 1941, appeared as an unadjusted credit. Insurance and casualty reserves, such as are shown under this heading by New York Central, might be considered as miscellaneous liabilities for analysis purposes. Operating reserves are set up to care for the losses that result from personal injuries, loss and damage, and other claims, and for similar purposes. These last-named reserves equalize the burden on the operating expenses, which might otherwise be extremely variable. Formerly, the railroad balance sheet showed accrued depreciation here rather than as a subtraction from the assets. Only the Accrued Depreciation—Leased Property still appears here. For our studies, it would be treated as a deduction from the Improvements on Leased Property, which appears among the assets as a part of the transportation property.

Sometimes a company borrows securities from a subsidiary or lessor company in order to pledge the same for its own bond issues. In such cases, they show here as a contingent liability offset by the contingent asset listed under "Unadjusted Debits." Neither item is added into the total liabilities or total assets but reported only "in the short column" as a memorandum.

**Capital security issues.** The first group of items shown on the

liability side are securities outstanding: stocks, bonds, equipment obligations, any debt in default, and receivers' and trustees' securities. The nonnegotiable debt to affiliated companies is also a part of long-term debt. Because it is owed to a related company such debt does not have the same pressing nature as a debt owed to outsiders. All these appear together in the illustrative New York Central balance sheet as Capitalization. The total omits the surplus that appears at the foot of the liability column.

The proportions of funded debt and capital stock are frequently referred to as a measure of the conservatism of the capital structure; but with the passage of years, surplus has been an increasingly important source of funds and should be included. The following figures show the proportions of bonds and net worth:

CAPITAL STRUCTURE PROPORTIONS OF ALL CLASS I RAILROADS IN THE UNITED STATES 1930, 1940, AND 1950

	Amounts (Millions of Dollars)			Bonds and Net Worth Proportions		
	1930	1940	1950	1930	1940	1950
Bonds	\$10,795	\$11,288	\$9,281	45.4%	51.4%	39.1%
Stocks	8,267	8,202	7,991			
Surplus	4,730	2,474	6,449	54.6	48.6	60.9
Totals	\$23,792	\$21,964	\$23,721	100 %	100 %	100 %

Bonds were 45, 51, and 39 per cent of total capital structure in the years 1930, 1940, and 1950, respectively, as shown in table. If surplus had been ignored, they would have been 57, 58, and 54 per cent of capitalization, respectively, in these same years.<sup>5</sup>

Capital structure proportions are of secondary importance, the primary consideration always being supporting earning power. They will, nevertheless, frequently show correlation with financial strength. The capital structure proportions of some of the leading railroads immediately prior to their receivership are shown below. Some roads, like the Wabash, showed a satisfactory capital structure but failed when the all-important earning power became inadequate.

A railroad with a funded debt in excess of 60 per cent of the total

<sup>5</sup> A discussion of the railroad financing that shapes capital structures is given in K. F. Burgess, "Sources of Railway Capital," *Analysts Journal*, Fourth Quarter, 1950, pp. 21-23.

## RAILROAD STATEMENTS

capitalization or 50 per cent of the combined bonds and net worth is likely to be in a weak position.<sup>6</sup>

	(Millions of Dollars)					
	<i>Seaboard Air Line— 1929</i>		<i>St. Louis San Francisco— 1931</i>		<i>Wabash— 1930</i>	
Bonds .....	\$190.1	73%	\$293.8	70%	\$141.8	44%
Stocks .....	60.9}	27	114.7}	30	138.5}	56
Surplus .....	9.4}		9.9}		44.3}	
	<u>\$260.4</u>	<u>100%</u>	<u>\$418.4</u>	<u>100%</u>	<u>\$324.6</u>	<u>100%</u>

But some companies have fixed charges in the form of rentals; and, unlike the interest on funded debt, these charges show no corresponding burden in the capital structure figures. If the securities supported by the rental charge were combined with the companies' own securities in the balance sheet, in the manner in which the operations of the leased road are combined with those of the owned road in the income statement, no problem would exist. The customary solution is to capitalize the rentals at an arbitrary rate of interest, generally 5 per cent, and show the resulting amount along with the funded debt in stating the debt burden in the capital structure whenever leases are at all significant, as they are for the New York Central. Applying this method to that company, the rents for leased roads, amounting to \$21,876,000 in 1951, were equal to 5 per cent on a capital sum of \$438,000,000. The effect of including this amount in the capital structure is shown in the following figures:

## NEW YORK CENTRAL RAILROAD COMPANY

## CAPITAL STRUCTURE PROPORTIONS

December 31, 1951

	Corporation only			Consolidated		
	Amounts (Millions)	Bonds and Net Worth	Rentals, Bonds, and Net Worth	Amounts (Millions)	Rentals, Bonds, and Net Worth	
Capitalized Rentals—5%	\$ 438	—	22%	\$ 108	5%	
Funded Debt .....	676	43%	34	1,032	45	
Stock .....	562}	57	44	562}	50	
Surplus .....	322}			581}		
	<u>\$1,998</u>	<u>100%</u>	<u>100%</u>	<u>\$2,283</u>	<u>100%</u>	

<sup>6</sup> Massachusetts law does not permit savings banks to purchase the bonds of railroads outside New England when such bonds exceed, or are authorized to exceed, three times the capital stock. The material given here indicates why the rule has slight protective merit.

This treatment creates a capitalized rental figure that, when added into the capital structure figures, shows a burden the equivalent of a similar amount of 5 per cent bonds. In this case it would add \$438 million to the \$676 of funded debt. Whereas the simple capital structure figures drawn from the illustrative balance sheet on page 357 shows a debt burden of 43 per cent of capital structure, the proportion of combined debt and capitalized rentals would amount to 56 per cent (22 plus 34). The rentals are typically a fixed charge that is as much a burden as so much interest on funded debt.

With consolidated balance figures now available, it is possible to compare its capital structure figures with our hypothetical one employing capitalized rentals. In spite of the arbitrary use of a 5 per cent capitalization rate, the increase in funded debt found in the consolidated balance sheet over the corporate balance sheet of \$356 million is not greatly different from the amount of \$330 million in capitalized rentals eliminated. In the consolidated balance sheet, the securities of the subsidiary companies that are held by the public are shown as a part of the consolidated system debt. In our hypothetical corporate balance sheet their place is taken by a capitalized rental figure. The rents paid under leases are what pay the interest on these subsidiary bonds now introduced in the consolidated figures as additional funded debt.

In spite of the rough equivalence of the capitalized rentals and funded debt in the corporate and consolidated balance sheets their percentage to total capital structure is somewhat lower in the consolidated structure—50 as against 56 per cent. The reason is that in the consolidated balance sheet we have substituted the actual assets of the subsidiaries for the investments shown by New York Central in its ordinary corporate balance sheet; and because in so doing a larger equity appears than the book value of the investment, the result is to increase the consolidated common stock equity. In this case the debt to net worth proportion in the consolidated capital structure of 50 per cent is intermediate between the proportions obtained from the corporate balance sheet figures that include and exclude capitalized rentals, which were 44 and 57 per cent, respectively. (The reader unfamiliar with consolidated statements will find a fuller explanation in Chapter XIX.)

**Capitalization and mileage.** The New York Central balance sheet shows that investors have placed at the disposal of the company

capital that has been used to acquire operating properties and securities. Yet railroad securities are often discussed as though solely related to miles of road owned. At the date of the illustrative statement, the New York Central owned but 3,623 miles of road, making the capital stock per mile \$155,000 and the funded debt \$187,000, a total of \$342,000 per mile. Any comparison on this basis is misleading, because it overlooks the fact that a substantial part of the securities outstanding represent funds invested in securities of other companies and miscellaneous physical property as well as transportation property. On the other hand, the stocks and bonds outstanding do not constitute the total investment of the company but omit the important item of retained earnings. To whatever extent investment per mile of road is significant, it can best be had from the figures on the asset side representing road and equipment.<sup>7</sup>

**Investment and earnings.** Earnings may be studied in relation to the assets that produce them or to the capital structure elements among which they are distributed. The relation may be seen readily by reference to our illustrative balance sheet for New York Central. Let us first simplify and arrange it along the lines commonly employed in other fields. Current items are placed first, the nonoperating investment grouped together, and the long-term debt and stockholders' investment similarly brought together.

#### NEW YORK CENTRAL RAILROAD COMPANY

##### CONDENSED CORPORATE BALANCE SHEET

December 31, 1951

• (Millions of Dollars)

Current Assets	199	Current Liabilities	143
Transportation Property	1,574	Reserve for Insurance	6
Less Depreciation	455	Reserve for Claims	30
Funds	11	Long-Term Debt	756
Deferred and Unadjusted	8	Stock	562
Investments:		Surplus	322
Affiliated Companies	409		
Other	42		
Miscellaneous Physical			
Property	34	485	
			1,819
			1,819

<sup>7</sup> Per mile data on this basis for the various roads are reported in the Interstate Commerce Commission, *Statistics of Railways in the United States*.

In this balance sheet, the assets may be divided as between operating and nonoperating, by including the working capital and minor items in the former, and grouping the latter as "investments" separately. To get figures that will balance with the capital structure, operating investment might be deemed to be all assets other than the "investments," less current debt and miscellaneous liabilities, such as the two "reserves" shown.

The return earned for these two investments, operating and non-operating, can be had from the income statement. The transportation assets earn the net railway operating income less the rentals shown under fixed charges that have been paid to others for the use of leased assets. In 1951 the former was \$40.0 million, the latter \$21.9 million, leaving net operating investment earnings of \$18.2 million. The income attributable to the investments is found under income statement heading "Other Income," \$23.0 million, from the "Miscellaneous Deductions from Income," \$2.1 million, subtracted to give a balance of \$20.9 million. (Were sufficient information available, more precise results would be had by assigning a part of the income taxes to the nonoperating income.) Our results read:

<i>Property</i>	<i>Book Investment</i> (Millions of Dollars)	<i>Earned</i>	<i>Rate Earned</i>
Transportation Assets (net)	\$1 156	\$18.2	1.6%
Investments	484	20.9	4.3
<b>Totals</b>	<b>\$1 640</b>	<b>\$39.1</b>	<b>2.4%</b>

Relating these earnings to the capital structure elements instead:

<i>Source of Funds</i>	<i>Amount</i> (Millions of Dollars)	<i>Return</i>	<i>Rate Earned</i>
Long-Term Debt (interest)	\$ 756	\$24.4	3.2%
Stockholders' Equity (net income)	884	14.7	1.7
<b>Totals</b>	<b>\$1 640</b>	<b>\$39.1</b>	<b>2.4%</b>

Because the consolidated balance sheet is a more complete picture of the New York Central operations, a more accurate picture may be had by employing those figures rather than the preceding ones.

## RAILROAD STATEMENTS

## CONSOLIDATED CONDENSED BALANCE SHEET

(Millions of Dollars)

Current Assets	282	Current Liabilities	165
Transportation Property	2,830	Reserve for Insurance	6
Less Depreciation	746	Reserve for Claims	25
Funds	24	Other Deferred Liabilities	12
Deferred and Unadjusted Investments	10	Long-Term Debt	1,126
Affiliated Companies	43	Minority Interest	82
Other	42	Stock	562
Miscellaneous Physical Property	84	Excess of Net Assets over Investment in Subsidiaries	59
	<u>169</u>	Surplus	<u>532</u>
	<u>2 569</u>		<u>2 569</u>

## Earnings on asset investment

Property	Book		Rate Earned
	Investment (Millions of Dollars)	Earned	
Transportation Assets (net)	\$2 192	\$58 7	2 7%
Investments	169	12 4	7 3
Totals	<u>\$2 361</u>	<u>\$71 1</u>	<u>3 0%</u>

## Relating these earnings to the capital structure elements

	Amount		Rate Earned
	Return (Millions of Dollars)		
Long-Term Debt including Lease Obligation	\$1 126	\$43 4	4 9%
Minority Interest	82	6 6	8 0
Stockholders' Equity	1 153	21 1	1 8
Total	<u>\$2 361</u>	<u>\$71 1</u>	<u>3 ^~</u>

In arriving at the total operating assets, not only road and equipment are included, but also improvements on leased railroad and the working capital. The accrued depreciation is deducted including the depreciation on leasehold improvements, which appeared under unadjusted credits in the original balance sheet. Such minor operating assets as appeared under the deferred and unadjusted credit, are also included. In calculating the long-term debt, the deferred liabilities were found to be a suitable addition. The minority interest represents the minor amounts of stock of subsidiary companies held by the public, which shares in the earnings of the subsidiaries.

At first glance, the related income for the operating assets would appear to be the net railway operating income, but that figure repre-

sents income derived from leased as well as owned railroad, and so the rent for leased road is deducted. As a result, the balance obtained as a return for the owned road includes the profit or loss from the leasing operations. The presence of the fixed rental deduction makes the net figure more variable than it would be if the whole property were directly owned.

The return from the nonoperating assets in the form of interest and dividends would be expected to be much more stable. A part of this stability is the result of holdings of bonds, and of intrasystem guaranteed securities, already discussed, and a part the result of dividends being more stable ordinarily than the income that supports them.

That the return for New York Central paralleled the experience of the railroads generally may be seen from the accompanying figures for rate of return calculated on capital structure (bonds plus net worth) for the New York Central and on net investment (net road and equipment plus cash and materials and supplies) for all roads combined.

	<i>New York Central</i>	<i>Class I Roads</i>		<i>New York Central</i>	<i>Class I Roads</i>
1950	2.8%	4.23%	1944	4.3%	4.73%
1949	2.2	2.86	1943	6.1	5.75
1948	2.6	4.24	1942	5.4	6.34
1947	1.7	3.41	1941	3.8	4.28
1946	9	2.75	1940	2.7	2.94
1945	3.4	3.77			

Although these percentages are calculated on slightly different bases they have a substantially comparable basis as is suggested by our previous analysis of return on these two bases. Corporate rather than consolidated figures were employed for New York Central because the latter were not published prior to 1949. Regulatory commissions commonly study return as it relates to the net transportation or other operating investment rather than in relation to the securities outstanding.

The decade of the 1940's was a period of high traffic volume; yet in five postwar years, 1946-1950, return for the Class I railroads averaged only 3.50 per cent. With such a low return the roads are in that much poorer position to face any recession of business. In the depressed 1930's (1930-1939), average return was 2.30 per cent, ranging from 1.38 per cent in 1932 to 3.59 per cent in 1930. In con-

trast, in the period, 1921-1929, return ranged from 2.99 per cent in 1921 to 5.24 per cent in 1929 and averaged 4.57 per cent.

**Principle of fair return on investment.** The Transportation Act of 1920 marked a distinctly new era in railroad regulation for this country. The provision perhaps of most interest to investors was that the Interstate Commerce Commission should so regulate rates that the railroads, taken as a group in a given section of the country, would be able to earn a "fair return" upon the amount actually invested in operating properties. That that objective has not been achieved is indicated by the figures previously cited. Individual railroads have, however, been able to do so.

This provision represented a logical outcome of the principle stated by Commissioner Daniels in the so-called "Five Per Cent Case" of 1914. At that time he said: "A living wage is as necessary for a railroad as for an individual. A carrier without sufficient return to cover costs and obtain, in addition, a margin of profit large enough to attract new capital for extensions and improvements cannot permanently render service commensurate with the need of the public."

Section 15a of the Transportation Act was amended by the Emergency Act passed June 16, 1933, which did away with the provision that rates should be fixed so that carriers might earn a fair return upon the fair value of their transportation property and with the recapture clause. Paragraph two provided:

In the exercise of its power to prescribe just and reasonable rates the Commission shall give due consideration, among other factors, to the effect of rates on the movement of traffic; to the need, in the public interest, of adequate and efficient railway transportation service at the lowest cost consistent with the furnishing of such service; and to the need of revenues sufficient to enable the carriers, under honest, economical, and efficient management, to provide such service.

The vagueness of this section gives it the ring of a political speech rather than of an administrative working rule. When, and if, railroad earning power returns to a more normal state, the Commission will be obliged to meet the concrete problem of regulating rates and earnings; and in the absence of more specific principles, the Act of 1920 is likely to be influential. Furthermore, if earnings become substantial and the stronger roads earn a high return on investment under a system of rates that represents a fair average level for a given territory, agitation for the re-enactment of something equivalent to

the discarded recapture provision would seem likely. For this reason, the relation of the older law to railroad statement interpretation is of interest.

**"Fair return" not investors' return.** The 1920 Act has been misinterpreted in several ways, and it has even been condemned as "unduly limiting profits" and "confiscatory," whereas, if actually carried out, it would make railroad profits greater than almost any year since 1920. The Act provided that rates should be so regulated as to permit the railroads as a whole to earn a fair return upon the fair value of the property engaged in rendering transportation service. A fair return was specified as  $5\frac{1}{2}$  per cent, with a possible addition of not more than 0.5 per cent at the discretion of the Commission. In May, 1922, a decision was handed down that the fair return should be 5.75 per cent. Had such a per cent been achieved, some roads would have been able to pay very high dividend rates in relation to par value—considerably more than the specified return. The reasons for this difference between the rate of "fair return" allowed on the investment and the dividend rate may be outlined as follows:

1. The figure for actual investment of the railroads as determined by the Commission is likely to differ from the value of the property as it appears on the railroads' books.

2. But even should capitalization and book investment agree, the issuance of bonds at a fixed rate of interest above (or below) the rate of return allowed by the Act would result in the return to the stockholders being below (or above) the rate allowed. Because the average cost of railroad borrowed funds, including equipment obligations, has declined below  $3\frac{1}{2}$  per cent, any higher return would increase the earning power of the common stock equity to a higher rate.

3. Moreover, dividends are declared as a per cent of par; but many companies have considerable surplus, so that a given return on the total stockholders' investment would produce a higher rate in relation to par. Return is based upon the assets, not the nominal capitalization.

4. Capital may be invested in properties which are not devoted to railroad operations. The rate of return in this case may be any per cent.

5. The *individual road* may receive either more or less than the stated fair return, because rates are fixed with a view to their effect on railroads as a group in a given section of the country. Conse-

quently, when the roads earn the "fair return," it follows that those roads that are more advantageously located and more efficiently managed are bound to earn a rate higher than the stated return.

The five foregoing points are considered in more detail as follows:

1. *Railroad valuation and capitalization* The determination of the value of the property of any given railroad is a matter that is left to the Commission to determine "from time to time and as often as may be necessary." It is understood that valuations begun by the Commission under a preceding act (1913) were to be used to establish an initial basis of value.

Additions to, and deductions from, the railroad properties are constantly taking place, and it appeared likely that once an initial basis of value was agreed upon between a given railroad and the Commission as a starting point, the accounting record of the railroad would thereafter be used to determine any later valuation. However, the railroads contended that consideration should be given to reproduction value, which was presumably higher at the time: This contention was upheld in the Supreme Court of the United States in the St. Louis & O'Fallon Railway case. However, the decision was vague as to what weight should be given that factor.<sup>8</sup>

The valuation work was sufficiently complete for the Commission to make use of it in the rate decision of July 29, 1920.<sup>9</sup> The valuation used was \$18,900,000,000 as of December 31, 1919, instead of the book cost of road and equipment amounting to \$20,040,572,611. This valuation, although less than book cost, was considerably in excess of the outstanding capitalization at that date, which amounted to only \$16,550,310,683.

2. *Effect of bonds on stock earnings.* Many railroads would find that the rate of return allowed is higher than that paid on much of their outstanding capitalization. The principle is that the issuance of bonds raises or lowers the rate earned upon stock, depending upon whether the rate paid on the bonds is below or above the rate

<sup>8</sup> The majority merely held that consideration should be given to reproduction cost, but that "the weight to be accorded thereto is not a matter before us." An able statement of the economic and administrative arguments for the more determinate basis employed by the Commission was presented in the dissenting minority opinion by Justice Brandeis. For a brief review of this case, see *Moody's Manual of Investments—Railroads* (1932), p. a66.

<sup>9</sup> I.C.C. Reports, Vol. 58 (July 29, 1920), pp. 220 *et seq.*

earned on the total capitalization. Moreover, the difference between the rate earned on the stock and that on total capitalization increases as the proportion of bonds to stocks increases.

3. *Effect of surplus.* It would seem hardly necessary to note that return on the investment of the stockholder should not be confused with the nominal rate on par, but the error is common.

4. *Investments in outside property.* Every large railroad system is concerned with its investments in other properties as well as with those in its own transportation property. These outside investments may be in nonrailroad property, such as the real estate investments of the New York Central in the vicinity of its New York City terminal, or the oil properties owned by the Union Pacific—in which case the earnings are not subject to the regulations of the Act. As in the past, so in the future, these nontransportation properties may be a major influence in the prosperity of some companies.

Should the outside investments be in securities of another railroad, each company would receive separate treatment in the application of the Act, the railroad owning the securities being regarded like any other investor. Such securities, being purchased in the open market and at varying prices, might show almost any conceivable rate of return.

5. *Weak and strong railroads.* The Act does not attempt to regulate rates for the individual road, in contrast with most utility regulation, in order to attain the desired end. It recognizes that rates for railroads in substantial competition must be practically uniform. The Act states that "the Commission shall . . . establish . . . rates so that carriers *as a whole* (or *a* a whole in each of such rate groups or territories as the Commission may from time to time designate) will . . . earn . . . a fair return upon the aggregate value of the property of such carriers held for and used in the service of transportation." Under such an adjustment of rates by territorial sections, railroads will tend to be relatively strong or relatively weak as they are strong or weak now. Rate increases that help the weak railroad will strengthen the strong railroad at the same time.

Partly to prevent the stronger roads from earning an "unreasonable" return, and partly to aid the weak roads (which may be essential to our commerce), the original Act contained a "recapture clause," repealed in 1933 both for the future and retroactively, where-in it was provided that one half of any net operating income in

excess of 6 per cent of the *value of railway property* must be turned over to the Government. All such sums were to be used as a fund to be loaned to railroads, presumably to those in greatest need. This clause resulted in considerable attention to the Commission's valuations, which were to have been important in arriving at the value of the property of the individual roads. Had the clause become effective, two results would have been likely: (1) strong roads would have found it to their advantage to absorb weak roads in order to lower the rate earned on total property and so reduce their loss through recapture, and (2) an accumulation would have been available that would have made the railroads largely independent of the Government aid that they were obliged to seek in the depression following 1929.<sup>10</sup>

The purpose of the Transportation Act, then, was to lay down a general principle of rate regulation that would be fair to the railroads as a whole, rather than to limit their earning power unduly.

In summarizing, it may be stated that the Act prescribed rate regulation that would, if carried out, have given the railroads a higher return than they actually have earned for some time in the past, and that would have permitted the stronger roads to earn very substantial dividends. The reasons are threefold. In the first place, even if a road had earned more than the "fair return" on its operating properties, only one half of the excess was to have been taken by the Government; in the second place, low interest rates on outstanding bonds permitted a surplus for dividends in excess of the prescribed return; and, in the third place, an unlimited return on properties not used for railroad operation was permitted.

**Analysis for investment purposes.** An investor is interested not so much in the general facts about the railroad's financial condition as in the relative safety of a particular bond or stock. If he is analyzing the position of a certain bond that is secured by a first lien on a piece of property indispensable to the operation of an im-

<sup>10</sup> The recapture clause would have operated in the 1920's at a time when even weak roads were able to finance. The Interstate Commerce Commission estimates that the fund, if operative, would have amounted to considerably over \$300,000,000 for the period, 1920-1931 (*I.C.C. Annual Report*, 1932, p. 93). The Reconstruction Finance Corporation had loans outstanding to railroads of \$280,000,000 at the end of 1932, and of \$337,000,000 at the end of 1933. For a concise statement of the difficulties of applying the recapture principle, see *I.C.C. Annual Report*, 1932, pp. 16-18.

portant railroad, he is interested in the character of the lien rather than in the general earning power of the road. Such a bond is hardly likely to suffer in a reorganization and commands a better price than a second lien on a greater amount of property. On the other hand, a general lien, though secondary, often ranks higher than a first lien on some unimportant, and perhaps unprofitable, property. In a reorganization, the bondholders with a lien on the latter type of property might be told to take the property mortgaged if they were not satisfied with the amounts they received under the reorganization plan.

As the strength of the investment position of a security diminishes, general earning power becomes more and more important. Stocks stand in the last position as regards security, and are valued in proportion to the sufficiency and stability of earnings. The higher return which investors in stock secure by taking the greater risk is often offset by the consequent losses. Where a higher return over a period of years is actually realized, it may be said to be the reward for ability to evaluate securities. The investor who hopes to make a large return by taking less secure investments must pay the price in the way of time and study to obtain that return.

**External factors affecting the future.** In addition to ability to analyze the past performances of a railroad through its statements, there should be an intelligent knowledge of those general external factors likely to change present conditions. The chief of these are:

1. *Political elements, both legislative and regulatory.* Legislation showed a favoring attitude in the Transportation Act of 1920. Again, during the depression after 1929, much was done to prevent the collapse of railroad credit. In absolute amounts the loans of the Reconstruction Finance Corporation were large, but relative to the properties protected they were not excessive. Furthermore, such aid indicated an appreciation of the social importance of preserving a situation the destruction of which might have impaired the solvency of important financial institutions. Legislation can, however, be harmful in imposing burdens designed to benefit special groups or interests.

Regulation similarly can be helpful or otherwise. In this respect, the rate-making power is of paramount importance, although the limitations of any commission to set rates which will be suitably profitable must be recognized. During a depression, rate adjustments

are an inadequate substitute for lost traffic volume. In ordinary times, attempts to raise rates may be restrained by the presence of competitive transportation agencies. Probably a portion of the slow but steady decline in the average per-ton-mile rate between 1922 and 1932 from 1.177 cents to 1.046 cents was due to rate-paring here and there undertaken on the initiative of railroad management either to gain or to hold traffic subject to competition.

2. *Consolidations.* The Transportation Act of 1920 encouraged consolidations subject to the approval of the Interstate Commerce Commission with the idea of effecting economies by the welding of the railroads into strong regional systems. The intention was, however, to preserve competition in each section of the country.<sup>11</sup> The possible advantages or disadvantages of mergers with other stronger or weaker roads affect the future possibilities and values of a railroad's securities. Other ambitious proposals have been put forward which, going beyond what is permitted by the law, propose to weld all the railroads in a given territory, and so, it is hoped, achieve the maximum economies of a monopolized public service.<sup>12</sup>

3. *Growth of population and wealth.* The growth of population by increasing traffic volume has been an important reason for the development of efficient mass transportation on a large scale. Growth from this factor has also offset the loss of traffic to other transportation agencies which have grown so rapidly in the recent past, and so has prevented what would otherwise have been a net decline. Future growth seems likely to be slower. Decrease is possible in some territories. Should per capita wealth continue to increase, the demand for transportation service could continue to grow, however, in spite of a relatively stationary population. The influence of population and wealth changes will be traced in the gross revenues and the character of the traffic, as will that of the next factor.

<sup>11</sup> Somewhat unwillingly, the Interstate Commerce Commission published a *Proposed Railroad Consolidation Plan* on December 9, 1929. *ICC Reports*, Vol. 159, p. 522 *et seq.* A modification was published July 13, 1932. *ICC Reports*, Vol. 185, p. 403 *et seq.* For the considerations governing the strategy of consolidation, and so its significance in analysis, see W. Z. Ripley, *Main Street and Wall Street* (New York: Little, Brown and Co., 1927), Chapter IX, "Planning Ahead."

<sup>12</sup> Probably the best known of these has been the Prince plan, which proposed a seven-system regional grouping and claimed potential economies on a staggering scale. A popular description is given by Dudley Hovey in "Checking Up the Prince Plan," *Barron's*, December 18, 1933.

4. *Competition of other forms of transportation.* The competition of water transport, pipelines, and, especially, the motor truck for freight traffic, and the bus, the airplane, and the private automobile for passenger traffic has become important. The shrinkage in the carriage of passengers since 1920 would have been alarming had that branch of the business contributed more heavily to profits. The rapid growth of truck transport has been largely confined to short-haul movements, and up to 1929 appears to have absorbed a portion of what would have been normal growth of railroad freight traffic. In 1929, ton-miles of revenue freight were about the same as in 1926, the previous high year (actually, 0.5 per cent higher). The decline in the years immediately following was largely the product of depression rather than competition, although the ability of truck operators to cut wage costs and to adjust their rates at will undoubtedly gave them an unusual advantage in seizing business during such a period. Another consideration to be kept in mind is that the decade of the 1920's was the period of the introduction of the truck, and with the passing of this initial stage of rapid development, its place in the transportation field should become more fixed and its inroads into railroad traffic less important.

In giving attention to the more obvious effect of the motor truck, the less obvious loss of previous growth in coal tonnage during this period is often overlooked. Coal traffic has accounted for as much as one half the total rail tonnage and about one third of the gross freight revenues. The tonnage of coal and coke moved was 5 per cent lower in 1929 than in 1926. With passing years it has lost some of its relative position, but continues to be of great importance.

The Motor Carrier Act of 1935 was passed to bring these carriers under the Interstate Commerce Commission and equalize their treatment with that of the railroads. The extent to which trucking is intra-state suggests difficulties in the way of Federal regulation, and the relatively small investment required to enter the business suggests that any type of regulation is likely to be extremely difficult to enforce. The success of the railroads in holding their position must depend upon greater efficiency in carrying mass shipments for the longer hauls.<sup>13</sup>

<sup>13</sup> For an analysis of the problem from the railroad point of view, see *An Economic Survey of Motor Vehicle Transportation in the United States* (Bureau of Railway Economics, Special Series No. 60, 1933); also, Co-ordinator East-

In this respect, developments in the art of railroading are of the greatest importance. Of prime importance has been the rise of the Diesel locomotive to displace the steam locomotive. Although its most rapid adoption was for passenger movement and switching, it later expanded rapidly into the freight field.<sup>14</sup> The most obvious advantage of this internal combustion engine, which is used to drive an electric motor, has been economy in fuel cost. It also has high speed and tractive power and a remarkable ability to stay in operation for long hours without requiring as much servicing as the steam engine.<sup>15</sup> Other less spectacular changes, such as mechanization of maintenance and shop work, the use of creosoted ties and heavier rails, the straightening of roadway and reduction of grades, and improvements in train control have also played a substantial part in increasing efficiency.<sup>16</sup> Much of this increased efficiency has been absorbed by higher wage rates and the hampering working rules enforced by strong labor unions.

**Conclusion.** From the foregoing chapter, it is apparent that the balance sheet is chiefly of interest for a statement of the capital structure proportions and working capital position. The assets are chiefly of interest in terms of their earning power. Consequently, the income statement receives the bulk of attention in railroad analysis. The constant problem is to interpret this record of past performance in the light of external conditions that may develop new trends in the future.

man's report on the regulation of transportation agencies other than railroads, *Senate Document 152*, 73rd Congress, 2nd Session (1934).

<sup>14</sup> Progress in dieselization for the larger railroads is reported in Arthur Jansen, "Diesels Continue Gains as Rail's Prime Power," *Barrons*, May 7, 1951, p. 6; its operating significance in N. C. Dezendorf, "The Maximum Economies of Diesel Motive Power," *Analysts Journal*, Third Quarter, 1951, pp. 43-46 and Chas. Kerr, Jr., "Locomotive Power in Pace with Changing Times," *Analysts Journal*, Third Quarter, 1951, pp. 51-54.

<sup>15</sup> Where an electric or Diesel-powered locomotive can spend upwards of 90 per cent of 24 hours per day in service steam locomotives spend only 30 to 40 per cent of the total possible locomotive-hours on the road.

<sup>16</sup> A brief statement in popular form is reported in the Association of American Railroad's *What's New*, November, 1951, in an address by W. S. Hackworth, "More Efficiency through Railroad Progress." The difficulty of translating this efficiency into increased earnings may be seen in J. H. Parmelee, "Railroad Trends and Prospects," *Analysts Journal*, Fourth Quarter, 1951, pp. 69-84.

## **CHAPTER XIV**

### **Public Utilities**

The public utilities, like the railroads, are a regulated public service business. The term "public utility" in financial circles has come to exclude the railroads and to encompass the electric light and power, the gas, telephone, water, and local transportation (buses and street railways) businesses. They are more clearly a monopoly than the railroads within their given territory save as government occasionally offers competition, as in the municipal electric and transit field. The utilities also differ from the railroads generally in their greater interest in domestic consumption (*i.e.*, in the home), which is more stable in depression, and in the more local character of their operations and regulation. The development of long-distance telephone operations and long-distance transmission of electric power and natural gas has been modifying this localization in recent years. Although the public importance of the services or goods sold has often been used to explain the need for governmental regulation of railroads and utilities, the more fundamental factors are probably the low capital turnover and the large duplication of capital equipment required to establish competing units. These two factors, when taken in conjunction, make monopoly natural, because it makes a large reduction in total costs possible. Under monopoly, which means that the restraining influences of competition are absent, regulation becomes essential.

The amount invested is usually high in relation to the annual volume of sales, with the result that a relatively high fraction of the consumer's dollar must be left available for a return upon capital if a normal rate is to be realized. Furthermore, if competing units are introduced, considerable overlapping investment is necessary. Parallel trackage for steam railroads or street railways, two sets of transmission lines down every street for each of two electric or telephone companies, or duplicate systems of mains for gas or water

represent a serious increase in costs where the interest upon capital may constitute up to as much as a third of the total cost of service. In no other important field save real estate does the return on capital bulk so large in final costs, and in that field competition does not necessarily involve the creation of "overlapping investment." If capital costs were less significant, some waste from duplication might be more than offset by cost reduction in other directions resulting from competitive pressure and the spur of the more rapid introduction of improvements in equipment and methods of operation.

The following table, showing comparative gross revenues and growth during the decade 1940-1950, will give an idea of comparative financial importance. The utilities as a group have passed the railroads in financial importance and have enjoyed a more rapid growth. The railroads still outrank any individual division of the utility industry. The gas industry had an especially rapid expansion after World War II as the result of long distance pipeline construction that brought natural gas to the major population centers. The financial troubles of the street railways have resulted in municipal ownership in many major cities so as to reduce greatly the volume of corporate securities available in the transit field. Water works are so generally owned and operated by municipal authorities, particularly in the larger communities, that they are not included here.

#### RAILROAD AND UTILITY REVENUES 1940 1950

(Millions)

	1940	1950	Per Cent Increase
Railroads (Class I)	\$4,297	\$9,473	97%
Utilities:			
Electric (Classes A and B)	2,440	5,086	108
Gas (both natural and manufactured)	872	1,958	125
Telephone (Class A)	1,273	3,458	172
Transit	737	1,452	98

**Capital structure proportions.** An idea of the current importance of the private electric industry and the general character of its balance sheet can be had from the Composite Balance Sheet of Class A and B companies tabulated by the Federal Power Commission for December 31, 1950.<sup>1</sup>

<sup>1</sup> Federal Power Commission, *Statistics of Electric Utilities in the United States, 1950*.

**PUBLIC UTILITIES**

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**COMPOSITE BALANCE SHEET**  
**CLASS A AND B PRIVATE ELECTRIC UTILITIES**  
**(All Departments)**  
**December 31**  
**(Millions of Dollars)**

Assets	1945		1950	
	Amount	Per Cent	Amount	Per Cent
Electric Utility Plant .....	\$12,176	69.1%	\$18,806	75.4%
Other Utility Plant .....	1,824	10.3	2,451	9.8
Unclassified Utility Plant .....	491	2.8	184	.7
Total Utility Plant .....	<b>\$14,491</b>	<b>82.2</b>	<b>\$21,441</b>	<b>85.9</b>
Investment & Fund Accounts .....	1,089	6.2	1,235	4.9
Current & Accrued Assets .....	1,696	9.6	2,058	8.2
Deferred Debits .....	264	1.5	172	.7
Capital Stock Discount & Expense .....	36	.2	41	.2
Reacquired Securities .....	57	.3	26	.1
Total Assets .....	<b>\$17,633</b>	<b>100.0%</b>	<b>\$24,973</b>	<b>100.0%</b>
<i>Liabilities</i>				
Capital Stock .....	\$ 6,062	34.4%	\$ 7,944	31.8%
Long-Term Debt .....	6,141	34.8	9,188	36.8
Current & Accrued Liabilities .....	965	5.5	1,527	6.1
Reserve for Depreciation & Amor- tization .....	3,065	17.4	4,384	17.6
Other Reserves .....	236	1.3	86	.3
Deferred Credits .....	113	.6	109	.4
Contributions in Aid of Construc- tion .....	46	3	66	3
Surplus .....	1,005	5.7	1,669	6.7
Total Liabilities .....	<b>\$17,633</b>	<b>100.0%</b>	<b>\$24,973</b>	<b>100.0%</b>

From this balance sheet the capital structure proportions can be seen as follows:

**ELECTRIC UTILITY CAPITAL STRUCTURE PROPORTIONS**

**1950**

(Millions of Dollars)

	Amount	Per Cent
Long-Term Debt .....	\$ 9,188	48.9%
Capital Stock:		
Preferred .....	\$2,575	13.7
Common .....	5,046	28.5
Premiums, Assessments, etc. .....	323	
	7,944	
Surplus:		
Capital .....	\$ 323	
Earned .....	1,346	8.9
	1,669	
	<b>\$18,801</b>	<b>100.0%</b>

Source: Federal Power Commission, *Statistics of Electric Utilities in the United States, 1950 Summary*.

The amount of long-term debt exceeded the capital stock, but the more significant ratio of debt to total stockholders' investment shows the latter to have been larger by a small margin. Combined capital structures for 10 large electric companies, serving metropolitan areas for the most part, show a slightly more conservative proportion of debt. The fact that these companies represented some \$5.4 billion of the \$18.8 billion total of capital structures indicates their relative importance and suggests a higher debt ratio than the 48.9 per cent over-all average for the smaller companies. Such higher debt is characteristic of the smaller companies that have grown rapidly and have found senior financing more economical. Although the debt percentage rose moderately during the rapid expansion following World War II, rising from 46.5 per cent in 1945 to 48.9 per cent in 1950; it was but little higher than the 48.1 per cent figure in 1939. During the war period, when private construction was held at a minimum, the debt ratio declined somewhat.

**COMBINED CAPITAL STRUCTURE PROPORTIONS  
OF LEADING ELECTRIC UTILITIES**

	1940	1950
Bonds	44	46
Preferred Stock	13	14
Common Stock	35	29
Surplus	8	11
Totals	<u>100</u>	<u>100</u>

Gas distribution companies would be expected to show capital structure characteristics similar to electric companies. However, because much of their growth and prosperity after 1945 has been based upon the expanded use of cheap natural gas, prudence would suggest debt repayment, even for the distributing companies during the expected life of this exhaustible resource. Although such companies might well continue to distribute manufactured gas thereafter, their economic situation would be greatly changed by a return to a higher cost fuel. Natural gas producing companies are regarded as industrial companies much like petroleum companies. Pipeline transmission companies, secured by long-term contracts with the distributing companies, have been able to finance an unusually large proportion of their construction with bonds.

As more street railways in the largest cities have become municipally owned, the bus has risen in relative importance for the remain-

ing privately-owned transit companies. These latter with their chief asset in relatively short-lived buses have tended to pay off their long-term debt and use installment loans of intermediate maturity or use depreciation funds for replacement.

Because of its contrasting capital structure, the figures of the American Telephone & Telegraph Company are reproduced below. The telephone industry consists chiefly of the operations of the American Telephone & Telegraph Company and its subsidiaries. It is estimated that over four fifths of the telephones in the United States are owned by this (the Bell) system. The huge size of the system is seen from the following table showing its capital structure. It is the largest nonfinancial corporation in the country. The table also shows the relatively low proportion of debt even when the operating subsidiary and holding company debt is combined. The rapid and extraordinary growth after 1945 lifted debt to a relatively high percentage for that system 42 per cent as compared with 29 per cent in 1940. A substantial use of convertible bonds has kept the common stock on the increase and made possible the indirect sale of shares at a favorably high price and low distribution cost. During the period when the bonds remained unconverted the company had the use of the funds at a relatively low interest rate. This period coincided with the period of construction when the additional investment was not yet productive of earnings.

#### AMERICAN TEL. PHONE & TELEGRAPH COMPANY

##### CAPITAL STRUCTURE (COMBINED SYSTEM)

(Millions of Dollars)

	1950		1940		1926	
	\$	%	\$	%	\$	%
Funded Debt						
American Tel. & Tel.	1 885	24	570	15	385	16
Subsidiaries	1 748	23	561	14	537	22
Notes Sold to Pension Fund	—	—	104	3	—	—
PREFERRED STOCK OF SUBSIDIARIES	18		38	1	110	5
COMMON STOCK						
American Tel. & Tel.	1 862	37	1 869	48	1 064	45
Subsidiaries (minority interest)	119	2	90	2	90	4
SURPLUS						
Premiums	626	8	270	7		
Reserves	19	—	63	2	196	8
Unappropriated	443	6	297	8		
	7 720	100	3 862	100	2,382	100

**Working capital.** The current assets and current liabilities occupy a secondary place in the utility balance sheet. In the combined balance sheet of electric companies shown above, current assets were only 8 per cent of total assets. The presence of notes payable is usually regarded as a sign of imminent financing, although a lack of working capital may be due to either operating losses or construction to be financed upon completion. Forehanded financial management is often disclosed by the presence of cash and temporary investments placed outside of the current asset section to care for construction in process, or of stand-by bank credit arrangements that insure adequate cash while the corporation is waiting for the proceeds of more permanent financing. In any case, where need is shown either by temporary borrowing or announced plans of expansion under way, the ability of the company to sell securities should be considered. In general, the current ratio is likely to be much lower than in the industrial field. In ordinary years it will be between one and two, and sometimes a working capital deficit is found. For the combined electric companies it was 1.35 in 1950. Such lower ratios are adequate for a cash business of the service type.

**Fixed assets.** The fixed assets devoted to operations make up the bulk of their side of the balance sheet. Some companies, particularly the large metropolitan units, show other fixed nonoperating investments; but these will generally be found to be closely related to operations. Most frequently, these investments are in companies which (a) act as a source of joint supply, such as a natural gas pipeline or producing property or a large, low-cost electric generating company, (b) are a subordinate department of operations, such as gas, transit, or heating business; or (c) are related properties that are in the course of being acquired as subsidiaries. Such holdings require separate analysis.

Under the uniform system of accounting for electric and gas utilities first prescribed by the Federal Power Commission to take effect January 1, 1937, the plant accounts are to show original cost, estimated if not known. Differences, such as might arise from write-ups must be segregated in adjustment accounts with the idea of their ultimate amortization. Individual balance sheets will still be found in which Plant Adjustment items are next to or included in the Plant account. These may represent write-ups or amounts paid for prop-

erty in excess of cost to the original owner.<sup>2</sup> Under Federal Power Commission rules, write-ups and intercompany profits of holding company systems on asset transfers have been charged off as found by its studies to earned or capital surplus. Amounts that represented bona fide arms-length cost of utility property bought for more than the original cost of construction is carried as an asset. Such Plant Acquisition Adjustment is charged off against income over a one-to 15-year period.<sup>3</sup> This asset may or may not be included in the plant total for calculating rate base. The general practice of state regulatory commissions is to permit the inclusion of its amortization as an operating expense deduction. The "Unclassified and Undistributed" accounts represent property accounts for which no such segregation had been made as of the date of the report. "Intangible plant" will sometimes be found that includes such items as organization expense, and franchises and consents.

Because the fixed operating assets, or plant, so frequently constitute 90 per cent or more of the total investment, they are usually thought of as being synonymous with that "investment" upon which the regulatory authority is supposed to allow a fair return. Even though a certain amount is supposed to be added to the investment for working capital, the combined balance sheets of the electric companies show how small that is likely to be. Three important factors may interfere with the realization of an adequate return upon the book value of the operating property:

1. *Lack of adequate economic market.* Even when a company operates under monopoly conditions, the absence of a large enough

<sup>2</sup> For illustration, see the consolidated statements of Southern Company in Chapter XIX. In a footnote to its balance sheet, Public Service of Indiana, Inc. stated: "During the 15-year period ending October 31, 1958, the Company is amortizing the balance of \$8,448,460 established in Plant Acquisition Adjustments (Account No. 1005) as a result of its original cost study completed in 1943. Such disposition is being made by charges to surplus account pursuant to orders of the Federal Power Commission and the Public Service Commission of Indiana.

<sup>3</sup> Federal Power Commission, *Annual Report, 1948*, page 70. For a defense of this latter type of asset, see Nash, who refers disparagingly to "aboriginal cost" where the increase in value was the result of impartial study at the time of purchase and calls attention to its acceptance by some state commissions in opposition to Federal Power Commission practice L. R. Nash *Anatomy of Depreciation* (Washington, D. C.: Public Utilities Report, 1947), p. 125.

market may prevent the realization of a normal return under any conceivable scale of charges. Raising charges to customers above a certain point may simply reduce both gross and net revenues. Street railways have suffered from this situation since World War I as a result of the competition of substitute modes of carriage. Quite probably, an attempt to realize an increased return upon railroad investment by the indiscriminate raising of rates would see traffic losses act as a counterbalancing force. Should the Government develop power projects without regard to the commercial possibilities of the market, a subnormal return might develop, although the remarkable growth of electric power consumption should be kept in mind in studying potential markets. Bluntly stated, regulation offers the utility a ceiling above which earnings are not permitted to rise except temporarily; on the other hand, as stated in the case of the *Federal Power Commission v. Natural Gas Pipeline Company* (315 U. S. 590): "regulation does not insure that the business shall produce net revenues."

2. *Price level changes.* Currently most regulatory authorities use the original-cost-less-depreciation standard for measuring the investment upon which a fair earnings return is to be allowed. In a few jurisdictions some consideration is given to current reproduction value. Any substantial weight given to the reproduction, or replacement, figure after a period of changing price levels would greatly reduce the usefulness of the balance sheet figures as a measure of "investment." If prices fell after construction, and reproduction costs were given primary weight as the basis for rate-making, the return upon book value of the investment (cost) would appear subnormal. Analysis and utility regulation would be made easier at this point by a stable price level. The tendency in recent years has been to place more and more emphasis in regulation on original, or historical, cost. This attitude is reflected in court decisions as well as in the practice of regulatory commissions. It is reflected in the requirement that accounts shall not show "write-ups" even when a property is sold by one utility corporation to another, without regard to possible changes in reproduction value.

When the company has been engaged in a rate case in which the value of the property has been considered and determined by the commission, valuation figures are available that can greatly aid the analyst in the interpretation of the financial statements and in

the understanding of probable attitudes of the regulatory authority in that jurisdiction.

3. *Maintenance and depreciation.* After the property has been in use for some time, the question may arise as to whether maintenance has been more or less than adequate to maintain its value, and whether sufficient allowance has been made for depreciation. A regulatory commission might decide that the property had less value than that shown on the books, and might allow earnings only in relation to the depreciated value. Because so much of the utility property of many companies has been acquired since the rise of stricter regulation of accounts and has been reviewed by regulatory authorities, the hazard of asset overstatement has tended to diminish in importance. Nevertheless the analyst will continue to scrutinize balance sheets for asset valuation and for depreciation practice.\*

**Plant turnover.** With the foregoing limitations of the book valuation of plant in mind, it is interesting to turn to two commonly used methods of studying plant valuation: first, that of comparison with gross revenues; and second, that of comparison with the capacity or output. The first relation is the familiar plant turnover. Because the fixed plant investment is so much larger than the annual sales, the ratio is generally reversed and expressed as the number of dollars invested in fixed property per dollar of gross revenues. In this way, plant turnover of 0.20 is stated as \$5.00 of investment per dollar of gross revenues. In the accompanying table, this latter ratio of revenues to gross assets is used and may be expressed in dollars by adding a cipher (thus, 5.2 represents \$5.20 of assets per dollar of revenues).

For the combined Class A and B electric utilities this ratio of gross fixed operating property to gross operating revenues was 3.9 in 1950.

\* Not until 1951 did the Capital Transit Company eliminate Road and Equipment Unclassified of \$5,250,000 from a net property account of \$31,649,819. The item had been carried on its books since 1895 but had not been permitted in the rate base by the Public Utilities Commission. The elimination was made a condition of a plan for recapitalization and stock split-up. *Annual Report for 1951*. In a letter to stockholders (Nov. 10, 1943), Western Union Telegraph Company stated that a Company study disclosed that certain values set up in the property account in 1910, based upon an appraisal by independent engineers, should be written off to comply with the original cost rule of the Federal Communications Commission. The Company agreed to adjustments that would reduce the Plant and Equipment by \$27 million to a gross book value of \$325 million.

This figure stands for a combination of steam and hydroelectric plants. The ratios for a number of leading companies for the years 1930, 1940, and 1950 are shown below.

RATIOS OF GROSS FIXED OPERATING PROPERTY TO  
GROSS REVENUES OF SOME LEADING ELECTRIC  
& GAS UTILITIES

	1930	1940	1950
Boston Edison Company	5.2	4.7	3.6
Commonwealth Edison	3.8	4.4	3.8
Consolidated Edison of New York	4.9	4.9	3.5
Consolidated Gas, Elec. Lt & Pr of Baltimore	4.2	3.9	3.1
Detroit Edison	5.1	5.0	3.4
Pacific Gas & Electric	8.2	6.7	5.9
Philadelphia Electric	5.4	5.3	3.5
Southern California Edison	8.2	7.8	5.7
Union Electric of Missouri	6.2	6.7	3.4

Some prefer, in the case of utilities, to study the relation of net rather than gross property to revenues. They argue that it is the net figure that determines the amount of investment upon which the customer is obliged to pay a return in the revenue dollar paid for utility services. The argument for gross plant, it will be recalled (Chapter IX), was that the volume of service rendered, as reflected in revenues, was not reduced by a reduction in plant valuation through depreciation. In a statistical presentation both may be used.

After a period of rising prices, such as was seen between 1940 and 1950, the ratio of plant to revenues tends to decline because operating expenses, other than depreciation, adjust quickly to higher prices and with them the revenues have to rise, even though sometimes tardily. Plant costs, however, continue on the books at the original cost. Only the new construction reflects the higher level of prices. Plant investment can also decline relative to revenues where utilization is improved; that is, the load factor is raised. Other long-run factors can work changes as differences in the rate of change in prices that go into operating costs and into construction. Changes in technology may also change the economic character of utility operations.

During a period of growth, these ratios based upon property account at the end of the year, rather than the average assets, tend to be overstated. In some cases, the asset doubtless included installations not brought to the point of full production—which might give an incorrect impression of excessive asset costs. Sometimes the pur-

chase of power from other corporations produces a further complication in the use of this ratio. The Safe Harbor Water Power Corporation was organized by the Consolidated Gas, Electric Light & Power Company of Baltimore and the Pennsylvania Water & Power Company, in order to develop a large low-cost hydrogenerating plant for joint use. The Southern California Edison now purchases power from the Federal government's Hoover Dam. Such arrangements mean that the operating company has no asset in its balance sheet for the money invested in generating equipment save as it owns securities in this outside company. The result is an apparently lower ratio of property to revenues, which may be deceptive to casual readers because the operating company is generally indirectly responsible for the financing of a share of this outside project through contracts for the purchase of power.

The high property investment of the water power company as compared with the ordinary company generating through the use of steam power is illustrated by the Pacific Gas & Electric and Southern California Edison figures. These companies depend heavily upon hydro plants. Such properties have in the past shown as much as from \$8 to \$10 of investment per dollar of revenues; but by eliminating the cost of fuel, they are able to devote a larger fraction of the revenue to paying interest and dividends. If such a company devoted itself solely to generation, selling its power wholesale for distribution by another company, its operating expenses would be nominal, and virtually the whole revenue could be used for capital return. The interrelation of plant turnover and the operating ratio will be considered below in the discussion of the income statement. Without charging the company that has a relatively high property investment with "overcapitalization" or "inefficient investment," it may be said that such a company will tend to have greater difficulty in earning a fair return, unless the property is of a different type, such as a hydroelectric property, and so not comparable.

**Investment in relation to capacity.** In the electric field, the Property account is sometimes studied in relation to its ability to produce power. Gross plant investment in electric utility property may be studied per kilowatt of capacity. (A kilowatt equals approximately  $1\frac{1}{2}$  horse power. One horse power equals .746 kilowatts.) From 1930 until after World War II in the late 1940's, much of the electric utility plant represented the huge expansion of the 1920's.

For that period Nash stated that the total cost of urban steam electric power properties, including transmission and distribution as well as generation, was likely to range between \$250 and \$450 per kilowatt of rated generating capacity. The lower limit was suggested as possible for a compact community with no underground distribution system, and the higher figures for fairly large cities with unusually extensive underground distribution, substations, and storage batteries for emergencies.<sup>5</sup> Utilities located in sparsely settled territory were sometimes found with high unit costs.

The Federal Power Commission has published more recent figures that represent a composite of older investment and some postwar construction.<sup>6</sup> Although subsequent expansion will give more recent costs a larger weight as time passes, these average figures provide a rough standard of reference. The average investment in steam-generating plant was \$103 per kilowatt of capacity, for hydro plants \$167, and for internal combustion plants \$146.<sup>7</sup> The outlay for transmission systems was \$46.60 per kilowatt of generating capacity and for distribution systems \$188.75 per customer. These figures would result in an average total cost per kilowatt of capacity ranging from \$285 to \$349.

<sup>5</sup> L. R. Nash, *The Economics of Public Utilities* (New York: McGraw-Hill Book Co., 1931), p. 343 Chapter XIII is devoted to "Tests of Utility Development."

<sup>6</sup> Barron's, May 29, 1950, p. 10.

In 1916, when the price level was lower, the average cost of a first-class steam plant was estimated at from \$55 to \$75 per kilowatt of capacity, and the first cost of an average hydroelectric installation at \$150 per kilowatt with possible additional amounts for storage dams. (H. G. Stott, "The Cost of Generating Power," *Electric Journal*, Vol. 13, August, 1916, pp. 373-376.) Morrow found a cost of \$82.50 to \$145, and an average of \$114, after 1927. L. W. W. Morrow, "Steam Station Cost Survey," *Electrical World*, Nov. 23, 1935, pp. 51-58. A convenient summary is given by John F. Childs and Francis A. Woodbridge, *A Practical Introduction to Public Utility Security Analysis* (New York: Barron's Publishing Co., 1940), pp. 93-97. Houston Lighting and Power Co. has been given as an example of a company able to reduce investment in new generating capacity below \$100 per kilowatt by the use of outdoor construction as compared with \$160 per kilowatt, or more, experienced on indoor plants recently constructed in other parts of the country (1948). (P. P. Stathas of Duff and Phelps, Chicago, in an address on "Outlook for the Utility Industry" before the Western Regional Trust Conference of the American Bankers Association, October 15, 1948.) The Edison Electric Institute in its annual *Statistical Bulletin* publishes indexes of electric light and power plant construction costs back to 1911 for various sections of the United States and also the volume of construction expenditures after 1921.

Applying these ratios to all private power companies in the country, investment in electric utility facilities at the close of 1949 ran as follows:

Type of Property	\$ Million	% Total in Service
Generation Facilities		
45,380,885 kw	5,287	37.50
Transmission System	2,115	15.00
Distribution System		
32,500,000 Customers	6,135	43.50
General Plant	528	3.75
Intangibles	35	0.25
Total	14,100	100.00

Although some have been inclined to attribute cost differences to variations in efficiency of design and promotion, further allowances must be made for differences attributable to location and, even more, to price level fluctuations over long periods. Hydroelectric installations cannot be said to have at any time a standard cost range, because the amount of power that can be developed is an accident of nature. Actually, some similarity is usually expected at a given time because possible water-power sites are known, and whenever the growth of the market is sufficient to make a promotion able to pay its way, development will take place. The chief concern of the analyst is that the cost shall not exceed that maximum beyond which the development will be unable to earn a reasonable return upon the amount invested in it. The continuing increase in efficiency of steam plant operation in recent years has somewhat dampened enthusiasm for water power, except where it is very advantageously situated. The power output per pound of coal consumed has increased remarkably in recent decades.<sup>8</sup>

Some of the special disadvantages that hydroelectric as compared with steam-power projects may suffer are as follows:

1. *A large investment per horse power.* The consequently heavier fixed charges make the company less adjustable in a financial way to any business reverse.

<sup>8</sup> Low costs are underlined in reports of new plant efficiency, as in the prospectus of Wisconsin Power and Light Company (April 4, 1952), which states that, in the first month's operation, its new 60,000 kilowatt supercharged hydrogen-cooled steam generating unit had a fuel cost of 3.68 mills per kilowatt hour, as compared to 4.35 mills for all of its steam plants combined.

2. *Frequent need for an initial overdevelopment.* The project may require the building of dams or other storage facilities in excess of immediate requirements, because the dam must, as a rule, be built once for all time. Consequently, the fixed charges during the early years may be difficult to meet.

3. *Development at the point of water flow and transmission difficulties.* The development may be at a distance from the market, and consequently may entail expensive transmission or even render the project impractical. It is stated that the Niagara water power development was a business failure when first undertaken before it was able to reach an advantageous market in the city of Buffalo.

4. *Ice.* This may in some locations make the development impossible.

5. *Variations of flow.* This hazard runs all the way from the risk of destructive floods to a lack of sufficient water to meet requirements. Without power, the huge investment continues to create carrying costs with no compensating revenue.

Because the chief costs for generating electricity by water power are capital costs, the government has a special competitive advantage over private corporations. Municipal organizations can finance the whole cost of the project by issuing low-yielding tax-exempt bonds, which have borne especially low interest rates as Federal income tax rates have risen. A substantial part of the financing by privately operated utilities has to be by equity securities at materially higher rates. In the case of such Federally-operated power developments as the Tennessee Valley Authority, a great deal of the construction costs are allocated to other than power investment, such as flood control. The result is to lower the apparent capital investment, and in the operating statements of such power properties it is customary to omit any of the interest costs to the Government on the funds invested. Consequently, a "profit" or "net income" is shown even before the cost of the Government's borrowing is covered even on that capital that has been allocated to the electric power department. Moreover, to compare the low rate paid on Federal government borrowing with that paid by private utilities ignores the risk of loss borne by the taxpayer should the Government undertaking fail to earn its way.

The capital costs (interest plus net income for stockholders) of

private electric utilities in 1950 amounted to 19.6 per cent of gross revenues, or 6.0 per cent on average invested capital structure. Had all of this been raised by the sale of tax-exempt municipal bonds at an average rate one half that paid by the private companies—that is, on an average yield basis of 3 per cent—their rates could have been reduced by 9.8 per cent without any change in their operating efficiency.

Furthermore, any comparison of municipal and private utilities needs to allow for differences in taxes paid by the business unit. This tax burden varies from year to year, but in 1950 Federal corporate income taxes consumed 9.1 per cent and other taxes 10.2 per cent of the electric revenues of private electric (Class A and B) utilities. (In the composite income statement given below, revenues and taxes are for electric and other utility revenues combined.) Similar publicly owned electric utilities, excluding Federal projects, reported total taxes equal to 2.2 per cent of gross revenues (1949) as compared with the 19.3 per cent total from private company electric revenues.<sup>9</sup>

In short, the customary comparisons of rates of municipal and private utilities are inadequate until they allow for (1) the "saving" that the former enjoy from tax-exempt bond financing instead of the taxable bonds and stocks used by the latter; (2) the tax burden borne by the operations of the private corporation that is escaped by the municipal corporation; and (3) the low cost Federal power supplied to municipal units in some areas, which reflects the capital and tax "savings" of the Federal government in its huge multi-purpose power and flood control projects. That these differentials are substantial is indicated by the average figures cited.<sup>10</sup>

### Income Account

**Operating ratio.** The foregoing discussion gives the reasons for holding a flexible attitude in interpreting the results in the income statement as reflected in the operating ratio. A low ratio of operating expenses to gross revenues may be due, in the case of an electric company, to the ownership of a hydroelectric generating plant that

<sup>9</sup> Federal Power Commission, *Statistics of Electric Utilities in the United States, 1950 Summary* and *Statistics of Publicly Owned Electric Utilities, 1949*, p. viii.

<sup>10</sup> H. G. Guthmann, "Competition from Tax-exempt Business," *Journal of Finance*, June 1951, p. 161.

requires a low ratio in order to leave an adequate return upon the large investment. A high ratio may mean, instead of inefficiency, that a successful management has been able to create an unusually large volume of business and so can earn a good return with a smaller margin of net income. To understand the effect of a well-developed load of business, the relation of the operating ratio and the ratio of property to revenues must be kept in mind. If a 6 per cent rate of return upon the property is the objective, then a company with a \$6.00 investment for each dollar of annual revenues will need an operating ratio of 64 per cent to earn the \$36 constituting the desired return; if the investment is but \$3.00, an operating ratio of 82 per cent will leave \$18, or enough to equal 6 per cent. Clearly, a utility able to increase its volume of business without increasing investment, merely by utilizing capacity more fully, will be able to spread its capital costs over the larger gross revenues and so survive on a higher operating ratio.

#### COMPOSITE INCOME STATEMENT

##### CLASS A AND B PRIVATE ELECTRIC UTILITIES FOR THE YEAR 1950

(Millions of Dollars)

	<i>Amount</i>	<i>Per Cent</i>
Operating Revenues	\$5,528	100 0%
Operating Expenses	2 980	53 9
Depreciation and Amortization	483	8 7
 Taxes:		
Federal Income Taxes	\$491	
Other Taxes	546	1,037
Total Operating Revenue Deductions	<u>\$1,500</u>	<u>81 4</u>
Net Operating Revenues	\$1,028	18 6
Income from Electric Plant Leased to Others	5	1
Total Utility Operating Income	\$1,033	18 7
Other Income	68	1 2
Gross Income	\$1,101	19 9
Interest on Long-Term Debt	260	4 7
Other Income Deductions—Net	19	3
Total Income Deductions	<u>\$ 279</u>	<u>5 0</u>
Net Income	<u>\$ 822</u>	<u>14 9</u>
 Dividend Appropriations from Surplus:		
Preferred Dividends	\$ 111	
Common Dividends	508	
	<u>\$ 619</u>	

These relationships between the income account and the balance sheet can be studied by a comparison of the Composite Income Statement of the Class A and B electric companies with the balance sheet figures given above.<sup>11</sup>

**Load factor.** The more complete utilization of capacity is known as increasing the load factor, which is the ratio of the average consumption to the maximum, or peak, demand. For an electric company this peak is the highest load placed by the customers' joint needs for a period of fifteen minutes, or some short period, during a given year. Because electricity is produced as used, the capacity of the system must be sufficient to handle this maximum demand. For gas, because of its storage in holders so that variations from hour to hour can be met by drawing on this reserve, the usual test of utilization would be the ratio of average consumption to the maximum demand for any one day in the year, which is usually known as the "production plant load factor." Similarly, the gas mains of a given size will carry only a certain load, or volume, of gas at the necessary pressure, and a distribution system load factor is computed as the ratio of average to maximum hourly send-out over an annual period. A telephone or transit company has the same load factor problem.

A comparison may also be made of the average load to the generating capacity of the system, or the capacity factor. Such a comparison brings out the degree of plant utilization but mixes two matters; namely, the extent to which demand has been smoothed out (the load factor) and the lack of full utilization due to an excess of capacity over the peak demand for the year. Some margin over peak load is believed desirable to provide against contingencies and unexpected growth.

In a period when plant expansion has outstripped growth in consumption, or consumption has fallen off greatly, the disparity between the plant and load factors will be unusually great because of the large spread between even the peak demand and the capacity of the plant. In studying hydroelectric plants, it is also necessary to

<sup>11</sup> Federal Power Commission, *Statistics of Electric Utilities in the United States, 1960*, p. xxiv. Class A includes companies with \$750,000 or more annual operating revenues or \$4,000,000 or more (original cost) of electric plant; Class B, companies with more than \$250,000 but less than \$750,000 operating revenues and plant less than \$4,000,000.

remember that the ability to reach rated capacity is dependent upon a water flow adequate to motivate all of the generators to their maximum, so that in some years it may be impossible to achieve the installed, or rated, capacity.<sup>12</sup>

**Diversity factor.** A favorably high load factor is usually achieved by building up demand in the off-peak hours or seasons by merchandising efforts. Customers never make their individual peak demands upon the plant at the same time, so that the total of their individual maximum demands can exceed plant capacity considerably. The possible peak demand of the individual customer is usually measured by his "connected load"; that is, the demand he would make if he used at one time every light, motor, or other electric device he had connected with the power circuit. A measure of the spreading out of the customers' peak demands is found in the diversity factor, which is the ratio of the sum of individual customers' maximum demands to the actual peak demand on the system during the given year.

An illustration, which represents a pioneering statistical investigation of its sort, will be valuable at this point in giving a picture of how the diversity factor operates. In describing the situation, Samuel Insull stated: <sup>13</sup>

The maximum load on our system came on the sixth day of January, and the demand on us for energy . . . was so diversified that, notwithstanding it would have taken 26,640 kw. . . . to take care of the maximum demand of each one of these customers separately, on the day when the greatest demand came on us from all sources, it took only 9,770 kw. for these same customers. •

Substituting these figures in our formula for diversity factor,

$$\text{Diversity Factor} = \frac{\text{Sum of Individual Customers' Maximum Demands}}{\text{Actual Peak Demand of System}},$$

we have:

$$\text{Diversity Factor} = \frac{26,640 \text{ kw.}}{9,770 \text{ kw.}} = 2.7.$$

<sup>12</sup> In addition to information published by individual companies in their annual reports and prospectuses, the Federal Power Commission publishes monthly *Electric Utility System Loads*, reporting energy generated and peak loads by companies. Capacity data are published in this series from time to time.

<sup>13</sup> Samuel Insull, "Centralization of Power Supply," *Public Utility Economics* (lectures before West Side Y.M.C.A., New York, 1914), p. 99.

Some of the factors producing this variation in the time at which the different customers make their maximum demands may be visualized best by considering the data from which the above diversity factor was obtained. The company studying the question installed with a large number of their important customers special recording meters that made a record of the load that the customer placed on the power company throughout the day. By taking the maximum load of each customer for the year, it was possible to obtain a sum of the maxima, which could be compared with the peak demand in the above formula.

Analyzing the factors that diversify the demand and so prevent a coincidence of customers' maximum demands, which would unduly push up the peak demand, we find:

1. Some consumers, because of the very character of their business, find the peak day "unseasonable" and have either no need or else very little need for power at that time. For example, the brick yards and quarries do not run in the winter time, as the frost interferes with their business. Again, the demand of the ice manufacturers is very much curtailed during the winter.

2. Some consumers will, by virtue of the use to which they put the power, cut their demand in one direction as they increase it in another or by the nature of their operation will make their demands at different times. Thus, a workman employed by a manufacturer—assuming that the workshop is meant for light manufacturing purposes and located in a high building—cannot run a tool in the workshop, go down in the elevator that takes him to the street, travel on a street car, and use the electric light in his home all at the same time.

3. Special arrangements may be made with some of the heavy industrial users to have them shut off their demand at the period of maximum load. In this instance, such arrangements were made with some particularly heavy users like the cement works.<sup>14</sup>

The illustration is suggestive of the manner in which an increase in the diversity factor may be utilized to improve the load factor and increase the economy of operation. The demands of the individual consumers are spread more evenly in the first and second instances by taking a diversity of classes of consumers, and in the third in-

<sup>14</sup> *Ibid.*, p. 98.

stance, by deliberate arrangement with certain of the largest industrial customers.

The problem is one of efficient utilization of a large capital investment, and is ordinarily thought of as being unique with the public utilities, where it is unusually important; but it exists wherever a considerable proportion of fixed costs is found.

**Load factor and cost to the public.** Low income for the power company per unit of power sold—and so, low cost—is associated with a high load factor and high output per capita. The difference is marked between Eastern cities, such as New York, Boston, and Philadelphia, and those, like San Francisco and Buffalo (Niagara Falls), which have enjoyed a substantial part of their electric power from favorably located hydroelectric power. The difference cannot be assigned wholly to innate differences in the cost of water power and of steam power; for Chicago, with steam production, is remarkably close to the hydroelectric standard as to lowness of residential rates, high output per capita, and first-class load factor.

The Western hydroelectrics were compelled to make, in most cases, very large installations at the outset. The only solution to their problem of securing an adequate return under these circumstances, in view of the then relatively sparse population, was to offer low rates and develop a large industrial consumption with a load factor sufficiently high to offset the low rates. The position of Chicago, however, is less the result of natural conditions than it is of efficient and imaginative management.<sup>15</sup> In recent years, even California with its

<sup>15</sup> *Ibid.*, p. 109. As of January 1, 1951, typical net monthly electric rates for residential service as compiled by the Federal Power Commission were:

	25 kwh	100 kwh	250 kwh.
Boston (Boston Edison)	\$1.40	\$4.69	\$9.40
Buffalo (Niagara Mohawk)	1.03	2.78	5.03
Chicago (Commonwealth Edison)	1.21	3.35	6.35
New York (Consolidated Edison)	1.33	4.42	7.79
Philadelphia (Philadelphia Electric)	1.55	3.78	6.48
San Francisco (Pacific Gas & Electric)	1.19	2.99	5.32

The decline of average rates is shown as follows:

1930	.	.	1.70	4.98	10.38
1940	.	.	1.36	3.88	7.05
1951			1.24	3.62	6.76

kwh = kilowatt hours of consumption

These data are also reported in *Moody's Manual of Investment, Public Utilities* each year in the general statistical survey of the industry.

wealth of low cost water power has come to use increasing amounts of steam-generated electricity.

**Differential rates.** An understanding of load factor and the large importance of fixed costs in utility operation leads to an appreciation of the advantages of securing additional business at off-peak hours, even at reduced rates, in order to spread the fixed overhead over a greater volume of units sold and so produce lower rates for all customers. But offering the service or product of a utility at different prices has the appearance of discrimination, and, therefore, of unfairness. The actual basis of differential rates should be an analysis of costs; an illustration will aid the reader of general financial statements to understand the peculiarities of various utilities as well as certain underlying principles of one of the most controversial aspects of rate-making.

In the following illustrative analysis, the figures for six coal gas companies situated in various parts of the United States were combined.<sup>16</sup> Table 1 shows the costs added to interest and dividends to secure the total cost of obtaining the gas service for the public. This would be the income of the companies as they existed. Table 2 furnishes other data necessary to the analysis. The capitalization is assumed for the purpose in hand. The load factor was 25.65 per cent, indicating that the average demand is but one fourth of the maximum hour's demand. The analysis of the costs is shown in Tables 3 and 4. The latter table shows the costs reduced to the most appropriate unit basis. The separation of the costs is as follows:

A. *General costs.* Overhead costs not affected by the immediate number of customers, the size of the plant, or the output of gas.

B. *Customers' costs.* All expenses and charges from the inlet of the customer's gas meter to the receipt of money in the cashier's till. Thus, the expense of reading meters is a customers' cost and varies proportionately with the number of customers.

C. *Demand costs.* All expenses and charges incidental to having

<sup>16</sup> This analysis was prepared by the Committee on Differential Rates ("Proceedings of the National Commercial Gas Association," 1914 pp. 494-522). The debated item of depreciation was omitted from the costs. This discussion is intended to develop the economics of rate structure rather than to serve as a guide to practice, because the specific costs have changed with the passage of time. For more recent practices and problems, see L. R. Nash, *Public Utility Rate Structures* (New York: McGraw-Hill Book Co., 1933).

a plant of adequate capacity to meet the maximum demand ready with heads up and gas at all the meters, but not actually making any deliveries through the customers' meters. For example, it is necessary to have equipment enough to turn out the maximum demand. So maintenance and interest charges on such assets will be a demand cost. When demand does not reach the maximum, the costs will continue.

D. *Output costs.* All expenses incidental to the additional production of gas for actual passage through the customers' meters over and above all demand costs

TABLE 1

	Total Cost	Cost per M Cu Ft Sold
Gross Cost of Gas-Making Supplies	\$ 591,584	36 7¢
Credit from Residuals	369,095	22 9
<hr/>		
Net Cost of Gas-Making Supplies	\$ 222,489	13 8¢
Retort House Labor	157,859	9 8
Maintenance	40,276	2 5
Other Production Expenses	75,248	4 7
<hr/>		
Total Production Expense	\$ 495,872	30 8¢
Total Distribution Expense	58,666	3 6
Total Consumer Expense	201,845	12 5
General Miscellaneous Expense	221,915	13 8
Taxes and Insurance	108,802	6 8
<hr/>		
Total Operating Expense	\$1,087,100	67 5¢
Interest and Dividends	523,711	32 5
<hr/>		
Total Cost of Gas Service	\$1,610,811	\$1 00

TABLE 2

	Par Value	Percentage Rate of Return	Amount of Return
Bonded Debt	\$3,740,793	6	\$224,448
Stock Outstanding	3,740,793	8	299,263
<hr/>			
Total Capitalization	\$7,481,586	7	\$523,711
<hr/>			
Gas Sales		10,811,000 cu ft	
Number of Customers		53,760	
Maximum Hour's Demand		717,400 cu ft	
Demand Load Factor		25 65%	
Sales per Customer per Annum		30,000 cu ft	
Sales per Capita per Annum		4,000 cu ft.	
Inhabitants per Customer		7 48	
Number of Inhabitants		402,000	

A more definite idea of the nature of this division may be had by examining the costs listed in Tables 3 and 4. The manner of dividing the costs among the customers is shown in Table 4. The general costs, although necessary, cannot be definitely allocated. They are divided among the customers equally for the sake of simplicity. In practice, they should be charged in any way that will least impede the growth of service and the reduction of its price. The treatment given in Table 4 puts them in the same class as the second column of costs, and makes them a part of a charge to be made on each customer regardless of his consumption.

**Relating rates and costs.** A superficial examination of Table 1 might lead one to state that any reduction of the rate below \$1 per thousand would cut into the surplus of 32.5 cents of return to the investors. Further, if the rate were below 67.5 cents, it would mean the sale of gas below operating cost. It is clear, however, that if an additional volume of gas could be sold without increasing the number of customers or the size of the plant, any receipts over 30.8 cents would add to the profits (see Table 4). Imagine the possibility of a doubled output under these conditions. This is possible, at least theoretically, because the load factor indicates that the plant is producing only about one fourth the amount that it does while under the peak load. This illustrates why the company would find it profitable to sell additional gas at a lower rate than \$1 or even \$.675 per thousand.

A study of Table 4 yields the following conclusions as to possible rates:

1. *Output costs.* This amount represents the minimum limit for the selling price, and gas sold at this figure, 25 cents, would not yield anything to cover the other necessary costs. This amount, then, must be included in any rate and should be charged per thousand feet of gas consumed.

2. *Demand costs.* These represent expenses necessary in order to be ready to supply the customers with gas, a fact that suggests dividing the demand costs among the customers on the basis of their potential demands. The addition of each customer has increased the connected load of the plant. The amount of the load depends on the size and number of burners installed.

As a practical matter, the maximum demand on any plant will

TABLE 3  
AN ANALYSIS OF GAS-MANUFACTURING COSTS

	<i>A</i> General	<i>B</i> Customer	<i>C</i> <i>Demand</i>	<i>D</i> <i>Output</i>	<i>E</i> <i>Total</i>
Gross Cost of Gas-Making Supplies		\$ 22,291		\$ 369,293	\$ 591,584
Credit from Residuals				369,095	369,095
Net Cost of Gas-Making Supplies			\$ 22,291	\$200,198	\$ 222,489
Retort House Labor			9,847	14,012	157,859
Maintenance			17,035	23,241	40,276
Other Production Expenses			64,934	10,314	75,248
Total Production Expense			\$ 114,107	\$381,765	\$ 495,872
Total Distribution Expense			36,931	21,735	58,666
Total Customers Expense			\$ 201,845		201,845
General and Miscellaneous Expense	\$ 221,915				221,915
Taxes and Insurance	108,802				108,802
Total Operating Expense	\$ 330,717	\$ 201,845	\$ 151,038	\$403,500	\$1,087,100
Interest and Dividends	160,195	190,658	172,858		523,711
Total Costs	\$ 490,912	\$ 392,503	\$ 323,896	\$403,500	\$1,610,811
Capital Invested	\$2,288,485	\$2,723,685	\$2,469,416		\$7,481,586

TABLE 4  
AN ANALYSIS OF GAS-MANUFACTURING COSTS—UNIT BASIS

	<i>A</i> General per Customer in \$	<i>B</i> Customer per Customer in \$	<i>C</i> Demand per M. Maratum Hourly Demand	<i>D</i> Output per M Cu. Ft. Sold in Cents	<i>E</i> Total Cost per M Cu. Ft. Sold in Cents
Gross Cost of Gas-Making Supplies			\$ 31.00	35.30¢	36.7¢
Credit from Residuals	—	—	\$ 31.00	22.90	22.9
Net Cost of Gas-Making Supplies				<u>12.40¢</u>	<u>13.8¢</u>
Retort House Labor			13.70	9.20	9.8
Maintenance			23.80	1.44	2.5
Other Production Expense	—	—	90.50	0.64	4.7
Total Production Expense			<u>\$ 159.00</u>	<u>23.68¢</u>	<u>30.8¢</u>
Total Distribution Expense			51.50	1.32	3.7
Total Customers' Expense	\$ 376				12.5
General and Miscellaneous Expense	\$ 413				13.7
Taxes and Insurance	2.02				6.8
Total Operating Expense	<u>\$ 615</u>	<u>\$ 376</u>	<u>\$ 210.50</u>	<u>25.00¢</u>	<u>67.5¢</u>
Interest and Dividends	2.98	3.55	<u>*240.95</u>		32.5
Total Costs	<u>\$ 9.13</u>	<u>\$ 7.31</u>	<u>\$ 451.45</u>	<u>25.00¢</u>	<u>\$1.00</u>
Capital Invested	\$42.41	\$50.66	\$3,442.17		\$4.84

never reach the amount that might be expected from the total connected loads, because there are always idle burners. The maximum demand of individual customers will come at different times. Thus, if all our customers chose to use their maximum demand at a single time, so utilizing the full connected load, it might be necessary to charge \$4 per 100 cubic feet of maximum demand. If, however, the customers made their demands at different times, thus spreading the load more evenly, so that there was a diversity factor of 2, the rate per 100 cubic feet maximum demand based on the individual customer's maximum demand would be but \$2. A diversity factor of three would reduce the charge to \$1.33

$$\text{Diversity Factor} = \frac{\text{Sum of Individual Customers' Maximum Demands}}{\text{Actual Maximum Demand}}$$

The diversity factor is to be stressed, because, it indicates how, when two customers purchase equal quantities of gas, one may be more profitable to the utility than the other. If one customer wishes service at the time of peak demand and the other desires gas at an hour when demand is slack, the latter is the more desirable. The first customer requires an increase in the capacity of the plant and a consequent increase in "demand costs"; the latter requires neither, and his business will increase the diversity factor. Herein lies the expediency of lower rates for certain customers, if lower rates are necessary to secure their business.

The load factor is also significant. The large consumer is frequently a steady consumer; that is, he consumes at a steady rate for a considerable period. The small consumer, on the other hand, frequently takes his gas in a lump within a comparatively few hours, which means that, in proportion to his needs, the smaller consumer requires a larger amount of plant investment per unit of consumption. Any rate based on the thousand cubic feet consumed would justly be higher for the latter individual. In the aggregate, the large consumer will pay more; but on a per-thousand-cubic-feet-consumed basis he will pay less, if rates are properly differentiated.

3. *Customers' costs.* These will presumably be distributed among all customers alike. The company might make a flat "service charge," regardless of consumption, to cover these costs, although as a matter of expediency the smaller customer might be charged less.

4. *General costs.* These costs are frequently lumped with the cus-

tomers' costs. They must be met, and preferably will be spread among the customers, as previously suggested, so as to interfere least with the growth of the service.

The foregoing discussion shows the error of thinking of costs solely in terms of "per thousand feet of gas consumed" (or "per kilowatt hour" for electricity). Even with a uniform type of product, there are differences in the per unit cost of production. Two variables that make for unlike costs are volume and the time of demand. These factors indicate, in this instance, the justice of differential rates. Such rates mean not only profitable expansion to the business, but greater service to the public and a possible reduction of rates.

The analysis suggests:

1. Business from present customers at those times when the plant is not fully utilized will be profitable on any basis above output cost.
2. Business from new customers that does not increase the maximum demand may be taken profitably at any figure that will more than cover output costs and customers' costs.
3. Business from new customers may profitably be taken at a lower rate than the present one, if that business results in a higher load factor and does not require a more than proportionate increase of investment in plant and distribution system.

**Investors' interest in rates.** This bare statement of the principles obviously requires much care in application. An avenue for business expansion that can be beneficial to both the company and the public is suggested. Because of the political pressure possible from a large body of small residential users, a management concerned with public relations will be inclined to resolve doubts about the proper allocation of costs in favor of the domestic user. However, the large industrial customer, who is most likely to be co-operative in purchasing gas or electric power at off-peak hours, is able to use substitute forms of energy or develop his own power if he is not won over by sufficiently low rates. On the other hand, the individual who uses his telephone for long distance personal calls may be induced by a reduced rate to use the long distance lines investment outside of business hours at a time when they would otherwise be idle.

The possibility that a utility with above-average rates may receive unfavorable treatment by the regulatory authority explains the investor's interest in the subject. He should seek the explanation, such

as high plant costs or high operating expenses. In a competitive line of business, unduly high costs would be reflected in smaller profits; but in a monopoly, the situation may not appear in the income statement until the blow of rate reductions has been struck by the regulatory commission. The principle of regulating rates to permit a fair return is not intended to require the public to pay a return upon imprudent or excessive investment nor for unnecessarily high operating costs.

In the study of rates, the average charged per kilowatt hour is insufficient evidence because of the varying proportions between wholesale and retail, and between industrial and domestic, business. Particular attention is given to rates charged the domestic customer. In the case of electricity or gas, the cost of the usual amounts consumed per month by the average residential user would be taken. Location and size of community will make for differences in unit costs. Coal will vary in cost in different localities. In small communities, it may be difficult or impossible to get the benefits of a high load factor and the low production cost of a large plant.

The inefficiency of the isolated electric plant led during the 1920's to the purchase and joining together of the services of many scattered communities into large central stations through long-distance transmission systems. Some such promotions paid high prices for properties acquired and depended upon the continuance of relatively high rate levels for their financial success.

**Gross revenues.** Only when the gross operating revenues, or sales, are broken down to show the kinds of utility service and the type of customer from which the income is derived can a really satisfactory study be achieved. With such detail available, changes in the revenues from year to year will be checked to see whether they result from (1) changes in size or capacity of the plant, (2) changes in the amount of business with the size of plant unchanged, or (3) a modification of the rate structure. A comparison of the property investment with the physical volume of business—that is, in kilowatt hours of electricity or cubic feet (or therms) of gas sold—permits study of the first two possibilities. Rate changes are a matter of public record, and the company very frequently reports the influence that they have had upon revenues for the first year of their effect so as to indicate their percentage importance.

During a period of price change, rates are generally adjusted

slowly to the changed level of costs. When prices rise rapidly, this tardiness is likely to reduce net income, especially if any substantial part of costs are in the form of commodities, such as coal, that fluctuate more rapidly than wages. The varying influence of this inflation can be read in utility income statements of the World War I period, 1917-1920, and in the late 1940's following World War II.<sup>17</sup>

The good will of the public is especially valuable in securing a fair adjustment of rates during such a period. The street railways have been seriously handicapped in obtaining any hearing on increases, no matter how reasonable, because of public ill will and suspicion—the latter justified in some instances by the unsavory activities of traction promoters and financiers. Growing frankness in public relations and the increasing ownership of securities by customers are regarded as favoring customer good will.

Stability of revenues, especially during a period of business recession, is valuable in giving utility securities investment standing. A large proportion of the more stable domestic or residential business, as compared with the more fluctuating industrial demand, is consequently looked upon as desirable. This difference in stability explains the importance attached to reports that classify the sources of gross revenues. Gas companies should show industrial and residential revenues; electric companies, their residential, industrial, commercial, street railway, and municipal revenues; telephone companies, their local and toll revenues. To the extent that the proportion of industrial business, particularly that of the heavy industries, is expanded, stability diminishes. For this reason, the gas companies look with particular satisfaction upon the increased use of their product for residential heating; and the electric companies, upon the increased use of domestic appliances, electric refrigeration, and air conditioning.

**Operating expenses.** The operating expenses may be studied both in relation to gross revenues on a percentage basis and on a per unit of service basis, as per kilowatt hour or per thousand cubic feet of gas. A suggested unit for the telephone industry has been the telephone station, or subscriber; but with growth in the number and the distance of calls, it is apparent that the individual subscriber has been receiving an increased amount of service with the passing of

<sup>17</sup> H. G. Guthmann, "Monetary Inflation and the Public Utility Industry," *Edison Electric Institute Bulletin*, May, 1946, p. 143.

years. Another possible basis of cost and revenue analysis is the single telephone call, but even this unit changes its character with the lengthening of the distance of the average call. Even when a single city is studied, the distance factor may be significant as the city's area expands. This changing character of the "unit of service" may explain why studies of telephone costs have shown that they increased with the extension of service, giving the telephone business the reputation of being an "increasing cost" industry.

The significance of the load factor, plant factor, diversity factor, and operating ratio in their relation to the study of operations has already been discussed. In addition to the influence of water versus steam power, two other influences may alter the usual meaning of the operating ratio of a gas or electric company: the proportions of wholesale and retail business and the presence of purchased power or gas. Whenever power or gas is sold wholesale, various operating expenses connected with distribution are reduced or eliminated, and the operating ratio declines, while the relative importance of the return upon capital funds increases. On the other hand, a company that purchases any considerable portion of its power or gas includes that cost among its operating expenses, and because this cost includes the capital expenses of the generating or manufacturing company, the operating ratio of the purchasing and distributing company rises. The latter company has shifted the burden of financing so much plant to another company.

Because water flow may vary from year to year, companies using hydroelectric plants usually require stand-by steam generating plants to care for the deficiency in power. The effect of subnormal flow is to boost expenses and the operating ratio and reduce earnings. In order to minimize the effects of such fluctuation upon earnings, some companies set up a reserve, or suspense, account that is built up in years when flow is above normal and reduced in years of subnormal flow.<sup>18</sup>

**Depreciation expense.** As in the case of the railroads, the policy with respect to maintenance and depreciation is of especial interest

<sup>18</sup> Prior to 1942, Consolidated Gas, Electric Light & Power Company of Baltimore adjusted operating expenses to equalize power costs which varied with the flow of the Susquehanna River. Such adjustments amounting to \$1,107,166, \$198,535, and \$904,022 in 1941, 1940, and 1939, respectively, were deducted from operating expenses and carried as a deferred charge "Hydro Equalization." Beginning with 1942, the practice was discontinued and the accumulated deferred asset was charged to surplus.

in the study of operating expenses. In the past, depreciation varied widely among similar companies because of differences in management policy. Practice has grown more uniform under the increased influence of regulation since the 1930's. The term *retirement expense* was commonly used in the past instead of *depreciation* in utility accounts. The method provided that charges made against income or surplus or both should provide for current retirements and build a reserve of indefinite amount against future retirement losses. The reserve was not intended to measure actual depreciation from wear and tear, obsolescence, or inadequacy, and so differed from the conventional straight-line depreciation common in most other fields. At the beginning of 1937, depreciation accounting was adopted by the Federal Power Commission and then recommended by the National Association of Utility Commissioners. It became effective in many states on January 1, 1938.

Some have argued for retirement allowances to be based upon the volume of electricity sold. Such a plan would have much to commend it from a financial point of view. It would adjust the charge to some extent to the ability of the company to bear the expense.<sup>19</sup> Others have excused the possible inadequacies of arbitrary retirement allowances on the grounds that retirements are chiefly due to obsolescence in this field and might be charged off gradually after the retirement is made.<sup>20</sup>

Inasmuch as conventional depreciation is now accepted in the utility field, the debate as to its merits need not be recounted here. The chief problem of the analyst is to decide upon its adequacy. The chief need of the student is to understand its effect.

One fear sometimes expressed, that reserves are in themselves

<sup>19</sup> Nash makes an interesting suggestion in line with this conception of depreciation, namely, that the retirement reserve be used as a "barometer fund" with an increase of rates following whenever the reserve falls below a certain per cent of property, and *vice versa*. Such a plan would tend to encourage retirements and stabilize net earnings. L. K. Nash, *The Economics of Public Utilities* (1931), p. 89.

<sup>20</sup> For a fuller statement, see Eliot Jones and T. C. Bigham, *Principles of Public Utilities* (New York: The Macmillan Co., 1931), pp. 478-494. A full statement of a more orthodox accounting position is given by the Public Service Commission of Wisconsin in *Depreciation* (New York: State Law Reporting Co., 1933), a review of legal and accounting problems. A discussion of various methods is given in L. K. Nash, *The Anatomy of Depreciation* (Washington, D. C.: Public Utilities Reports, 1947).

dangerous because they "reduce the book value of the property and consequently the amount of investment upon which the company will be permitted to earn a return," deserves passing attention because it is a result of a common misunderstanding of the effect of allowances upon the statements and the business.

The following figures illustrate the effects of setting up a reserve for depreciation. In the two illustrative balance sheets, the current liabilities are eliminated by subtraction from the current assets, and the difference is stated as the asset, "Working Capital." It is assumed that the term "investment of the company" includes working capital as well as fixed properties.

#### SOUTHERN ELECTRIC LIGHT & POWER COMPANY

December 31, 1950

Working Capital	\$ 50 000	Bonds	\$300,000
Fixed Property	500 000	Stocks	250,000
	<hr/>		<hr/>
	\$550 000		\$550,000

If the Southern Electric Light & Power Company does not set aside any reserve for depreciation, the balance sheet will, at the end of a period of years, show little change, assuming, for the sake of simplicity, that no additions are made and that all earnings are paid out in the form of interest and dividends.

If, on the other hand, it is the policy of the regulatory commission to permit the inclusion of an allowance for depreciation among the operating expenses, and the company follows this policy, a higher rate will have to be charged the consumer to obtain the same return on investment as that earned in the former case, and an accumulated "Reserve for Depreciation" will appear in the balance sheet. At the end of five years, during which an allowance equal to 2 per cent of the fixed property has been made each year, the initial balance sheet shown above will be changed to read:

#### SOUTHERN ELECTRIC LIGHT & POWER COMPANY

December 31, 1955

Working Capital	\$ 50 000	Bonds	\$300,000
Fixed Property	500,000	Stocks	250,000
Added Property	50 000	Reserve for Depreciation	50,000
	<hr/>		<hr/>
	\$600,000		\$600,000

A possible misconception is that reserves of the sort described injure the stockholders by reducing the book value of the investment upon which a return is allowed. The error lies in the failure to observe that the company is collecting an additional amount from the consumers to cover the allowance for depreciation included among the operating expenses. (The validity of this reasoning depends upon the assumption that customers pay rates sufficient to cover this allowance as well as other expenses and a fair return to investors each year.) Because in this case it was assumed that no actual retirements were made in the five-year period, the full amount accumulated or accrued as "reserve" appears on the liability side or it might have been deducted, as is the common practice, from the asset depreciated. The unexpended sums collected from consumers is shown here as "~~Added~~ Property." In practice this addition may be:

1. Expended to increase the operating properties, thereby keeping at the original amount the property investment upon which a "fair return" is to be earned;
2. Invested in independent properties or securities that will yield an independent return; or,
3. The sum may be used to reduce the bonded indebtedness or other securities.

In any one of the three situations outlined, the investors, whether bondholders or stockholders, are not injured. In the first two situations, other substitute property has been acquired to earn its own way in place of the reduced valuation of the utility rate base; in the last, the amount of securities upon which a return needs to be paid has been reduced. During a period of growth the sums collected from the consumer to cover depreciation are put to work in new property. When construction is slow and replacements not required immediately, it is usual to retire senior securities, usually debt. In years in which major replacements actually take place, any sums needed in excess of current depreciation allowances become a part of the general problem of new financing.

The important difference between this policy of setting up adequate reserves and that of creating no reserve becomes clear if we suppose that shortly after December 31, 1955, it became necessary to retire certain units of equipment to make way for new. It will be assumed that the cost of the old equipment was \$40,000. If a depreciation

accrual, or "reserve," has been set up in advance to allow for this loss of value, then when the retirement takes place, the cost can be removed from the asset account and the "reserve" used to absorb the loss rather than a sudden large decrease in surplus. Thus, if the \$40,000 is used to reduce the asset and the "reserve," the balance sheet will then appear:

**SOUTHERN ELECTRIC LIGHT & POWER COMPANY**

Working Capital	\$ 50,000	Bonds	\$300 000
Fixed Property	460,000	Stocks	250,000
Added Property	50,000	Reserve for Depreciation	10 000
	<u>\$560,000</u>		<u>\$560,000</u>

With the financial position shown in the preceding statement, the company should be able to provide itself with the newer equipment either by disposing of the "added property" or, if this addition represents permanent improvements to the plant, by selling new securities. In either case, every dollar of the outstanding securities of the company will be based on a full dollar's worth of property.

**Result of lacking reserves.** If it had not provided a reserve, the balance sheet of the company would have appeared as follows after the retirement but before the entries were made to show the new property:

**SOUTHERN ELECTRIC LIGHT & POWER COMPANY**

Working Capital	\$ 50,000	Bonds	\$300 000
Fixed Property	460,000	Stocks	250,000
Property Abandoned	40,000		
	<u>\$550,000</u>		<u>\$550 000</u>

The disadvantages of this latter situation are apparent: (1) The securities must for a time be supported by a fictitious asset, "property abandoned," in reality a deficit, a condition particularly undesirable if it should be necessary to finance the purchase of the new equipment with a security issue. (2) The public must be asked to continue interest or dividends upon the securities issued to obtain this property that is no longer in use (unless the investor is to stand the loss) and to pay a sum to provide for the writing off of this lost property. (3) The management of a company in the situation outlined might hesitate to make a retirement that would appear in the balance sheet in this manner, regardless of the wisdom of making the desired changes from the standpoint of efficient service.

Where a depreciation reserve is being created, the consumers are asked to contribute to the replacement of the property during the period of use. The consumers enjoy the benefit of this property and so should provide for its retirement without loss to the investors. If the policy of protecting the investor is to be assumed, as is ordinarily expected to be the case where regulation limits the return, then later consumers must pay in a sum not only sufficient to replace the property no longer in use, but also sufficient to show a return on that property until it has been written off. This policy is one which has found favor in some quarters.<sup>21</sup> The assumption is that the company may expect a rate of return sufficient gradually to remove or amortize this amount over a period of years.

The arguments for this course of action are two: (1) that any reserve for retirements must, by its very nature, be based on guess-work, and hence unscientific and possibly unfair to the consumers of the company's service; (2) that any retirements of this nature, that is, those caused by advances in the arts, will provide economies which will make it possible gradually to write off the retired property without increased charges to the consumers.<sup>22</sup> However, the common attitude, which is now reflected in current practice, is found in the statement of Alexander Dow, former president of Detroit Edison: "When I find myself managing other people's large investments, I prefer not

<sup>21</sup> In Kansas City Southern R. R. v. United States (231 U. S. 423), the Supreme Court sustained a rule of the Interstate Commerce Commission providing for the amortization by way of a charge to future operating expenses of the cost of portions of a railway division withdrawn from service because of the construction of a new line with lower grades and increased capacity, holding that the cost of the property thus withdrawn from service should not remain in the investment (asset) accounts, and that "abandonments occasioned by changes of this character are, therefore, chargeable to future earnings." In the uniform classification of accounts recommended for electric and gas utilities by the National Association of Railroad and Utilities Commissioners, an asset account is provided for "property abandoned" to include the amount of any property destroyed or abandoned because of replacement, obsolescence, or an extraordinary casualty, or for any other reason, when such loss has not been provided for in advance through a reserve.

<sup>22</sup> Without its generous reserve policy, the American Telephone & Telegraph Company and its subsidiaries would probably have been handicapped in meeting the obsolescence of their property. The cost of changing from ground circuit to metallic circuit in the early days and the expense of such things as putting wires underground, of adopting lead cable, and of instituting the automatic switchboard and the dial telephone have meant enormous outlays. Other remarkable and costly advances in technology as applied to the various utilities have been common.

to take the chance of being able to earn the price of a dead horse out of future economies.<sup>23</sup>

**Maintenance and depreciation practice.** Although conditions affecting maintenance and depreciation can vary as between utilities operating in the same field, considerable attention is devoted to inter-company comparisons and average practice. In the electric field, the customary depreciation allowance (or retirement expense) has risen from as low as 1 per cent of gross property in the early 1930's for some companies to around 2½ per cent in recent years.<sup>24</sup> Companies with considerable hydro property usually show a below-average rate. This allowance has approached 10 per cent of gross revenues. When price inflation has lifted other operating expenses materially, the depreciation expense, tied to plant account at original cost, has tended to decline as a percentage of revenues. As new property is added at the higher level of prices, the depreciation allowance tends to climb again relative to revenues. Because depreciation rates are subject to review from time to time, they may change as estimates of the remaining life expectancy of the assets are revised.

Maintenance for electric utilities has tended to run around 6 or 7 per cent of gross revenues. Possibly in an earlier period when depreciation allowances were materially lower, some lesser replacements were included under this account rather than subtracted from the accumulated depreciation (or retirement) reserve. Because some differences in policy may still exist, probably comparisons of the combined maintenance and depreciation are more reasonable than comparisons of either figure alone.

Telephone plant has been depreciated at higher rates than electric plant. The Bell system has shown depreciation expense of about 3½ per cent of gross property, a figure which has represented about 10 per cent of revenues. Combined maintenance and depreciation have

<sup>23</sup> W. Z. Ripley, *Main Street and Wall Street* (Boston: Little, Brown and Co., 1927), p. 335.

<sup>24</sup> Detailed information on recent methods of depreciation in use, rates relative to revenues and plant, and accumulated depreciation relative to plant for individual companies and the electric industry may be studied in Federal Power Commission, *Electric Utility Depreciation Practices* (annual). Earlier practice may be found in Harry G. Guthmann, "Public Utility Depreciation Practice," *Harvard Business Review* (Vol. XX), Winter, 1942, pp. 213-222. For an early study, see Barclay J. Sickler, "Expenses and Capital Ratios of Wisconsin Electric, Gas, Telephone, and Water Utilities: 1927-1931," *Journal of Land and Public Utility Economics* (Vol. IX), February, 1933, pp. 57-62.

run at about 30 per cent of revenues. During the depression years after 1929, this percentage rose from about 30 per cent to 38 per cent of revenues in 1933, although the absolute dollar amounts for both maintenance and depreciation declined, the former somewhat more than the latter.

Water companies, because of the nondepreciable nature of some of their property and the long life of other parts, have usually shown low depreciation relative to gross property, usually about 1 per cent, although sometimes less. This expense may, however, still represent from 6 to 10 per cent of gross revenues.

Depreciation practice of gas distributing utilities must be studied with caution where shifts have been made from manufactured to natural gas. In such cases, the depreciation expense and capital costs of gas production are shifted to the accounts of producing and pipeline transmission companies. Practice may also vary with respect to the facilities formerly used for gas manufacture. They may be continued as stand-by facilities or retired from the accounts.

Depreciation practice will also vary considerably among transit companies depending upon the types of equipment used—electric cars, trolley buses, and gas or diesel buses—and policy with respect to replacements.

The relation between the depreciation-to-revenues and depreciation-to-gross-property percentages can be traced through the property turnover ratio. Thus, if there is a property investment of \$5 for every dollar of revenues, a depreciation rate of 2 per cent on total property will amount to 10 per cent of revenues. Multiplying the common depreciation rate on total property by the usual relation of property to revenues, we find the following relationships:

	<i>Depreciation Rate</i>	<i>Property Revenues</i>	$\times$	<i>Depreciation: Revenues</i>
Electric (steam)	2 5%	4	$\times$	10%
Telephone	3.5%	3+	$\times$	10%
Water	1 %	6	$\times$	6%
Gas	1 5%	5	$\times$	7.5%

The sum of maintenance and depreciation for many steam electric companies runs between 16 and 18 per cent. Because of the less depreciable character of the average hydroelectric property, depreciation expense for a company having some hydro plants will usually constitute a lower per cent of gross plant. The percentage of gross

revenues consumed for maintenance and depreciation, however, is often not greatly different from the same relation for a steam electric property. When it is remembered that the property investment of a hydroelectric plant may run twice as high in relation to revenues as that of a steam plant, it is apparent that the same percentage in relation to revenues may be but half as great for the former measured in relation to the Property account.

The ratios given here should be regarded as suggestive rather than ideal; but, like other averaged data, they provide a starting point for the work of analysis. Where no reasonable explanation for variations from the best practice in maintenance and depreciation standards is found, the reported earnings may be adjusted to allow for the difference. The assumption is that a company unable to maintain its property adequately is likely to be handicapped to that extent at some future time because excessive maintenance is almost certain to be reduced at some time, and although rates may also be reduced when that occurs, the company is likely to be favorably situated with respect to a well-kept property with obsolescence at a minimum. The investor remembers that rate reductions for utility services are easier to achieve than rate advances.

**External factors.** The five external factors likely to be checked in connection with a utility-statement analysis should be mentioned before a summary is given of the points to be covered in such a study. These are:

1. **Franchises.** These are the grants to the utility of the right to use public property for its purposes. The electric and telephone companies string their transmission lines down the public streets, and the gas and water companies bury their mains under the street. The electric railways lay their tracks on the public right-of-way. The two chief risks to the investor in a franchise are a limited life and a limited rate to be charged for service. Both features were regarded as essential for the protection of the community and the consumer in the earlier days before regulation had become well developed. The periodic expiration of the franchise gave an opportunity to the grantor to drive a new bargain. Sometimes the occasion has been used to make unfair demands, and the utility with its investment permanently sunk in fixed property has been in a disadvantageous bargaining position. For this reason, the investor prefers a perpetual

franchise, or one which is "indeterminate"; that is, good as long as the utility continues to fulfill its service obligations. Under such a franchise, a municipality may retain a right to purchase the property on some agreed basis.

Similarly, the fixed fare was designed to protect the public against excessive rates. This amount was sometimes extremely generous to the utility and sometimes, after costs had gone up as a result of a rising price level, very inadequate. Nowadays, this unsatisfactory arrangement has been abandoned and commission regulation of rates is designed to keep them in alignment with costs and a fair return to capital.

2. *Regulation.* The character of the regulation accorded utilities in a given jurisdiction is also of interest. Competent supervision may be helpful by preventing unwise financing, by insuring sound accounting practice and full reports, and by preventing competition. Regulation can, however, be oppressive in the matter of rate-making and in failing to allow adjustments to changing conditions. The two points likely to receive close attention are the commission's attitude as to what constitutes a fair rate of return and its stand as to what is a proper basis of valuation, the latter especially if the price level changes substantially.

3. *Price-level movements.* The possible importance of changes in the level of prices lies in their effect upon operating costs and sometimes upon possible changes in the valuation of the property investment.

4. *Legislation, including taxation.* Because of public interest in the utilities, legislation is not infrequent and may affect investment values. Taxation has been heavy.

5. *Government competition.* With Federal government hydroelectric projects at Muscle Shoals, Hoover Dam, Coulee Dam, Bonneville Dam, and a number of other less important places, a source of potential competition that was formerly unimportant has been introduced. This power can be sold for distribution through existing private companies, but the Government may seek to compel a company buying power from the Government to make rates that would be inadequate to cover costs and a reasonable return to existing capital, with the threat of aiding in the erection of municipal plants. Companies with low rates, such as the Southern California Edison, and doing business in a growing territory that will absorb the new power

supply, are most likely to adjust themselves satisfactorily to the new situation. Commonly, the Federal government favors municipal over private utilities in the sale of its power.

**Summary of statement analysis.** In the study of utility statements, the following are likely to represent the chief points of interest:

1. *Capital structure proportions*, which should (a) include surplus, and (b) give consideration to the probable valuation of the supporting operating property and to the character of any other assets, such as investments.

2. *Working capital position*.

3. *Coverage of charges*, fixed and contingent. These figures should be read in the light of possible adjustments for excessive or inadequate maintenance and depreciation. Furthermore, the possibility that no cash expenditures may be required for the depreciation allowance, at least for a few years, should be kept in mind in judging the likelihood of default where fixed charges are barely earned or not fully earned after the deduction of that expense. Some like to add *margin of safety* data to the coverage figures. Ordinarily, this datum is calculated as the percentage of gross revenues left as *margin* after interest charges and available for income taxes and stockholder return. The wider this margin, the safer and more stable the position of the bondholder.

4. *Rate of earnings*. Percentage earned on total investment, represented by bonds and net worth, and the return on the common stockholders' equity will both receive attention. If more than a minor amount of nonoperating investments are present, the earnings on these and upon the utility assets proper will be studied separately. Reported earnings may require some adjustment after the adequacy of the maintenance and depreciation has been checked.

5. *Stability of earnings*. The territory served and the type of customer will help to explain stability. A large proportion of residential, or domestic, business is regarded as favorable, although diversification is necessary if a high load factor and economical operation are to be achieved. Because of their unfavorable position, transit properties are looked upon as unsatisfactory as compared with other types of utility business in recent years. Since 1930, manufactured gas com-

panies have fared less satisfactorily than electric and telephone utilities. If two companies are alike in other respects, such as type of customer and territory, the one with a larger per cent of gross revenues left over for capital return will show the greater stability of earnings. The investment quality of common stocks is sometimes tested by comparing the per cent of revenues remaining for the common after interest and preferred dividends. The wider this margin, the more stable is the net for the common likely to be.

6. *Rates.* Because a company with low rates is in a stronger position to resist demands for reductions, the rates charged, especially those for the average domestic customer, are a matter of interest. Factors which help to explain rate levels, such as unit operating costs, property turnover, and load and diversity factors, will be studied here.

7. *Growth possibilities.* Opportunities for profitable expansion may make a company's common stock more attractive because earnings can be retained advantageously, or rights to subscribe to new stock that will be attractive may be given. Such stock offers the holders the advantage of building up an investment at what amounts to a high rate of compound interest—7 per cent or better. If, however, the common stockholder is unable to exercise his subscription rights and they have little market value, he may profit nothing from growth. It is even possible in such circumstances that he may suffer if the additional common stock is sold for less than book value so that his investment per share is diluted. This is particularly true when the retained earnings are insufficient to offset such dilution.

Profitable growth may result from either increasing population or a rising per capita consumption. Customary studies of the territory served and patronage development, in the form of per capita and per customer consumption and the number of customers in relation to population, are designed to uncover potentialities, although the actual previous trend of business is often one of the simplest and best measures of a given company's opportunities and ability to exploit a given market.

In outlining a particular study, the analyst will adapt the foregoing to the need for information in the particular case, the limitations in the way of available data, and the amount of effort that can be economically expended.

## CHAPTER XV

### Mercantile and Manufacturing Corporations

**Scope of the chapter.** Much of what was said in the discussion of statements in general in Part I, particularly Chapters IV to XI, inclusive, is applicable chiefly to the mercantile and manufacturing types. The tendency to speak of the characteristics of this group when speaking generally is due to the wide discussion of statement analysis in banking and mercantile circles, where the mercantile and manufacturing concerns are of greatest interest and so have had the most written about them. Accounting literature very generally stresses these types of business, giving distinctly less attention to the public service and financial types of corporation.

This chapter, then, should be regarded as supplementing the previous general discussion with illustrative material to emphasize some of the special characteristics of "industrial" financial statements and the problems connected with them.

**Mercantile and manufacturing characteristics.** The characteristics that chiefly distinguish these two groups of businesses from the public service corporations are:

1. *Direct competition.* Much of the competition of steam railroads and generally all of that of the utilities is of the indirect sort; that is, the competition of substitutes. The result of direct competition is to make a business more likely to fail and go the way of liquidation. Profit variations are wider and more difficult to forecast where there is direct competition. The need in this field for considering the factors external to the business that are likely to make for survival requires more attention.

2. *Regulation.* The close regulation accorded the public service companies has ordinarily been absent from competitive business. Such regulation as does occur may arise (a) from the special nature of the business, as in the case of the milk business, which involves

public health; (b) from some regulated activity, such as selling securities to the public; or (c) from emergency conditions, such as prevail during a war period.

3. *Character of assets.* Whereas the assets of the public service corporation are largely fixed, those of manufacturing tend to average about half current and half fixed, and those of merchandising will be predominantly current if the store locations are leased, and made up of more nearly like amounts of fixed and current assets where locations are owned.

4. *Capital turnover and operating ratio.* Wide variations exist among different types, but manufacturing concerns as a group show lower investment in relation to annual sales than do public service corporations, and merchandising establishments a lower proportionate investment than does either. Higher operating ratios consequently still permit a fair return. Successful manufacturers are likely to show an operating ratio of between 85 and 90 per cent and over, and merchants 90 per cent and over. Exceptions may be readily found, however. Meat packing, which would be classed in the manufacturing group, has a very high capital turnover, and with an operating ratio as high as 95 per cent, will show a very satisfactory return.

**An untried promotion.** The relatively secondary value of statements in disclosing investment profit possibilities is clearest in the case of the untried promotion just brought to the point of operation. The balance sheet of the Jennings Machine Company illustrates this type of situation. This company owned a newly patented device that had been thoroughly studied and was backed by a group of men of moderate means who wished to see the project capitalized at a modest figure. The patents were acquired for common stock. By selling among persons in the vicinity of their plant, they were able to dispose of their stock on an unusually favorable basis. Aside from the common shares issued to the promoter-capitalist and the inventor, all the stock was sold on a cash basis. Instead of a bonus of common stock with the purchase of a preferred share, the investor was given "the privilege of purchasing a limited amount of common with his preferred." That the business is barely out of the promotion stage is evident from the balance sheet.

To those familiar with the statements of manufacturing enterprises

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in the promotion stage that are planning to develop an unknown device, this balance sheet is not unusually poor. There is working capital present, and the mortgage is adequately protected. The position of the preferred stock is unsatisfactory in that it is supported to a great extent by intangibles and items that cannot be realized on.

### JENNINGS MACHINE COMPANY

December 31, 1951

#### *Assets*

##### Current Assets:

Cash	\$ 18,500.57
Accounts Receivable	1,601.04
Materials Inventory	2,549.23
Total	\$ 22,650.84
Land and Buildings	12,782.40
Machinery and Equipment	57,596.90
Deferred Expense	708.84
Patent Rights	65,149.00
Development Expense	96,750.57
Profit and Loss Deficit	24,758.27
Total	<u>\$280,396.82</u>

#### *Liabilities and Capital*

##### Current Liabilities:

Accounts Payable	\$ 3,767.42
Accrued Expenses	2,000.40
Total	\$ 5,767.82
Mortgage Payable	12,500.00
Preferred Stock	200,570.00
Common Stock (21,606 shares, no par value)	61,559.00
Total	<u>\$280,396.82</u>

The concern is dependent upon the success of its device. If the device is practical and sufficiently protected by the patents, it is possible for the corporation to succeed. An analysis of this aspect is of first importance, and the balance sheet secondary, though helpful.

The last three assets are intangible, and a balance sheet based on tangibles would show:

Current Assets	\$22,651	Current Debt	\$ 5,768
Plant & Equipment	70,379	Mortgage Payable	12,500
Deferred Expense	709	Net Worth	75,471

\$93,739                            \$93,739

The profit and loss deficit is a warning signal pointing to the likelihood of the modest working capital being shortly exhausted unless new financial life is injected into the business by the arrival of hoped-for profits.

**New corporation in distress.** A case similar in type but representing a manufacturer in production is that of a company that may be called the Goldcord Tire Company. This company built a plant and started operations in 1919—a most unfortunate time, coming as it did in a year of high costs and just before the crash of 1920. The comparative balance sheet (given in round figures for the sake of simplicity in reading) indicates the serious trouble met with by this company.

#### GOLDCORD TIRE COMPANY

##### COMPARATIVE BALANCE SHEET

As of December 31

<i>Assets and Deficit</i>	<i>1920</i>	<i>1921</i>
<b>Current Assets:</b>		
Cash .....	\$ 2,000	\$ 2,000
Liberty Bonds .....	130,000	105,000
Stock Subscriptions .....	37,000	16,000
Customers' Receivables .....	159,000	170,000
Total Cash Assets .....	<b>\$ 328,000</b>	<b>\$ 293,000</b>
Finished Goods .....	126,000	123,000
Goods-in-Process .....	45,000	36,000
Raw Materials .....	210,000	99,000
Advances on Material Contracts .....	125,000	26,000
Total Current Assets .....	<b>\$ 834,000</b>	<b>\$ 577,000</b>
Land and Building .....	391,000	392,000
Machinery and Equipment .....	•277,000	300,000
Prepaid Expenses .....	57,000	38,000
Intangible Items .....	1,780,000	1,857,000
Profit and Loss Deficit .....	123,000	266,000
<b>Total</b> .....	<b>\$3,462,000</b>	<b>\$3,430,000</b>

#### *Liabilities and Capital Stock*

<b>Current Debt:</b>		
Notes Payable .....	\$ 368,000	\$ 334,000
Accounts Payable .....	94,000	96,000
Total Current Debt .....	<b>\$ 462,000</b>	<b>\$ 430,000</b>
Preferred Stock .....	1,500,000	1,500,000
Common Stock .....	1,500,000	1,500,000
<b>Total</b> .....	<b>\$3,462,000</b>	<b>\$3,430,000</b>

The statement of the Goldcord Tire Company revealed a lack of working capital and a need for an addition to replenish it. The statement of income, profit, and loss for the period did not lend assurance of any immediate improvement.

### GOLDCORD TIRE COMPANY

#### CONDENSED STATEMENT OF INCOME PROFIT AND LOSS For the Year Ended December 31, 1921

	Per Cent
Sales (net)	\$608 000 100 0
Cost of Goods Sold	556 000 91 4
<b>Gross Profit</b>	<b>\$ 52 000 8 6</b>
 <b>Operating Expenses</b>	
Selling	\$120 000
Administrative	52 000 172 000 28 3
 Net Loss on Trading	\$120 000 19 7
Other Income	11 000 1 8
 Total	\$109 000 17 9
Interest Expense	34 000 5 6
 Net Loss for the Year	<b>\$14 000 23 5</b>

The fact that the goods were fabricated, while prices were falling from material that had been to a great extent contracted for some time in advance would explain much of the high cost of goods sold and the low profit margin. More discouraging from the long-run point of view is the small volume of business in comparison with the amount invested. The inventory turnover is also very low. Considering the unfavorable times and the lack of a satisfactory record, the company was relatively fortunate in acquiring the necessary funds through an issue of 8 per cent bonds to fund current debt. Later, the condition of the company failing to improve a reorganization was forced by bondholders and other creditors, operations finally discontinued, and the business liquidated.

**The established business.** In contrast with such unproved enterprises is the established concern with a record that shows little change in the character of its properties or operations from year to year. Here statements shed a maximum of light on the possibilities. The less that change is likely to take place, the more likely is the past to mirror the future. Sometimes this static condition is concealed during a period of price level change by a fictitious appearance of growth that is only an adjustment to a higher level of prices. On

the other hand, a company that has had little change in its record may subsequently change from a static to a growth company.

The problem often arises of adjusting the reported per share figures of both static and growth company for changes in the capital structure. The simplest adjustment arises where the common stock is divided into a greater number of shares as the result of either stock dividends or a stock split-up. Frequently, an adjustment for such a change is made in such items as earnings, dividends, and book value per share in the figures compiled by investment services and sometimes by the corporation in its annual report. Otherwise the reader must be prepared to make his own adjustment in order to obtain a series of comparable figures that will extend back smoothly from the present into the past. The contrast between actual and adjusted figures may be illustrated.

#### Reported figures per share

	1944	1945	1946	1947*	1948 *	1949†	1950
Book Value	\$100	108	120	65	67	35	38
Earned	\$10.00	12.00	16.00	7.50	4.50	3.00	4.50
Dividends	\$ 3.00	4.00	4.00	2.50	2.50	1.50	1.50

\* Stock dividend of 100 per cent

† Stock split two shares for one

#### Adjusted figures

	1944	1945	1946	1947	1948	1949	1950
Book Value	\$25.00	27.00	30.00	32.50	33.50	35.00	40.00
Earned	\$ 2.50	3.00	4.00	3.75	2.25	3.00	4.50
Dividends	\$ .75	1.00	1.00	1.25	1.25	1.50	1.50
Retained earnings	\$ 1.75	2.00	3.00	2.50	1.00	1.50	3.00

The two sets of figures tell the same story but the adjusted figures make it much easier to trace back the growth in terms of the present shares. It is also easy to note any differences between the book value growth and the retained earnings that should receive the attention of the analyst. In this case, book value rose \$5.00 per share in 1950, although only \$3.00 of earnings were retained. The excess arose from the sale of shares at a figure considerably in excess of book value so that the average value was increased by an additional \$2.00.

Had any stock split occurred in the middle of a year, dividends in the early part of the year before the division would have had to be adjusted before adding it to dividends paid after the division. Earnings and book values, however, are calculations based upon shares outstanding at the end of the year.

Sometimes the analyst finds it useful to adjust past earnings for other capital structure changes in order to bring out their effect upon common stock earnings. A corporation may, for example, have retired bonds or preferred stock. If this retirement has been effected out of retained earnings, the common stock will benefit in the future from the saving in charges. This savings, less any increased income taxes in the case of bond interest saving, may be added back to the common earnings previously reported to measure the earning power giving effect to the debt reduction. Or refinancing or reorganization may recast the capital structure without altering the properties greatly. Available earnings might be greatly reduced, however, if stocks were substituted on a large scale for bonds. With income taxes at a 50 per cent level, half of the interest reduction would flow into the tax collector's hands. The adjusted figures would permit the analyst to study the past earnings as they would be distributed among the new securities in the capital structure.

The American Agricultural Chemical Company offers an example of an established business in which large capital structure changes occurred, the effect of which might be studied by adjusted figures. The changes were accompanied by unusual write-downs of the fixed assets, so that the annual allowances for depreciation and depletion shrank greatly. In 1921 a heavy funded debt, amounting to \$36,616,000, was present. By reducing working capital, by using all available earnings over interest, and by using the sums provided by depreciation and depletion allowances for debt reduction rather than replacements, this debt was completely retired in the following ten years. The properties remained substantially unchanged save for a small railroad, the Charlotte Harbor and Northern Railway, which was sold in 1928 to the Seaboard Air Line Railway for about \$5,000,000.

Besides the bonds, the capitalization consisted of \$28,455,000 of 6 per cent cumulative preferred and \$33,322,000 common stock. The former issue had an unbroken dividend record from 1899 down to April 15, 1921, after which no dividends were paid. As a result of the large accumulation of back dividends on the preferred and the irregularity of earnings, a recapitalization plan was proposed and made operative January 2, 1931. Under this plan, the preferred was exchanged share for share for the common stock of a new corporation organized in Delaware under the same name. The common stock-

holders received one share of this new stock for each ten shares of their issue. In the new organization, the former preferred held over 89 per cent, and the former common over 10 per cent, of the new stock.

*Per Share of New  
Common Adjusted for*

<i>Years Ending June 30</i>	<i>Available for Interest*</i> (Thousands)	<i>Per Share Old Preferred</i>	<i>Capital Structure Only</i>	<i>Capital Structure and Depreciation</i>
1922	\$1,452	\$3.95d	\$ 6.23	\$ 9.85
1923	3,031	1.76	13.00	16.91
1924	2,553	.40	10.95	14.96
1925	4,387	7.19	18.8	21.00
1926	3,075	3.59	13.19	15.28
1927	352d	6.76d	1.51d	38
1928	3,520	7.86	15.09	17.33
1929	1,504	2.47	6.45	8.78
1930	2,229	5.30	9.56	11.61
1931	216d	.89d	.56d	
1932	1,189d	.	5.10d	5.06d
1933	508d	.	2.18d	.218d
1934	977	.	4.19	4.19

\* No interest after 1932

d = Deficit.

If the hopes for the new stock had been measured in terms of the old preferred, for which it roughly stood, the per-share earnings for that stock would have appeared as shown in the accompanying table. But this comparison ignores the sums formerly spent for interest, which under the new capital structure would be available for dividends, because the last bonds were retired in 1931. Consequently, earnings adjusted to the new capital structure should not be the earnings available for the former preferred stock, but the net income before interest and dividends. The divisor for these net income figures, consisting of the number of common shares outstanding, was reduced in the spring of 1934 from 315,661 to 233,206 shares by the repurchase of stock by the company at \$35 per share. As this amount was less than the net current assets per share, the asset position of the remaining stock was improved. The productive assets being undiminished, the earning power per share was correspondingly increased. The removal of "weakly held" stock from the floating speculative supply presumably improved the technical market position.

A further adjustment of earnings is also desirable. In the fiscal

year ending June 30, 1923, the book value of the fixed operating assets, consisting of plant and equipment and phosphate rock mines, was reduced from \$48,764,000 to \$41,005,000; in 1930, another write-down from \$30,791,000 to \$7,899,000 was made. After the first write-off, the annual allowance for depreciation and depletion fell from about \$1,500,000 to \$1,100,000; following the second, to \$685,000 in 1931, after which the figure declined yearly until it was only \$532,000 in 1934. Inasmuch as this annual charge depends upon the book value, subsequent earnings reports should show this expense at the reduced figure, and if past earnings are to be made comparable to this situation, they must be increased to appear as they would have been reported had the latest depreciation and depletion practice been in effect then. To make this adjustment, an annual allowance of \$600,000 was assumed, and for the years prior to 1932 any excess over that figure was added to the reported earnings.

The earnings adjusted for changes both in capital structure and in depreciation policy are shown in the last column. In order to show the relative importance of the latter adjustment, the per-share earnings for the finally outstanding common are given in the next to the last column as they would have appeared if adjusted only for changed capital structure. The significance of these adjustments can be appreciated from the fact that the average earned per share for the old preferred stock for the years 1922-1930 was \$1.98; for the new common during the same years, it would appear as \$10.20, making allowance for the changed capital structure, and as \$12.91 if a further adjustment were made for depreciation and depletion reduction.

This adjustment of earnings increased the showing most in the earlier years, with the result that the new figures show a marked downward trend. The fact that income in the period under review depended largely upon the purchasing power of the farmers raising cotton, the price of which suffered during this period, explains the movement. A graphic comparison of cotton prices in the fall months when the crop was being sold and the earnings for the fiscal years ending the following June 30th showed a high correlation. Such an adjusted record will be subject to the same limitations as any record of past performance, but it will speak a clearer language. At the end of this period, this chemical company was already moving into other lines than fertilizer, which would alter the character of the company and its growth potential. One factor that would have had to receive

greatly increased consideration if the reconstruction were being made in a later period would be the increased importance of income taxes, which would have swallowed a substantial part of the interest savings.

**Growing concerns.** Concerns that are in the growth period present more difficulties than does the established business, because of changing proportions. It is often hard to judge what the man will be from a study of the growing boy, but tendencies are frequently revealing. Expansion may come from merger with other existing concerns or from within. In the former case, the combined earnings of the predecessor units are studied in relation to the capital securities of the consolidation. Generally, economies are promised by the promoters, but they may prove illusory. A period of adjustment is often necessary to bring the parts into harmonious working order.

In discussing the influence of changing capital structure upon analysis, mention should be made of potential changes which may follow from the existence of convertible bonds or options to purchase common stock of a company. Such privileges are usually exercised by their holders when, and if, the common stock develops increased profits and dividends, and so they may act as a potential source of "dilution," threatening to spread the golden flood over an increased number of shares if it does arrive. If the exercise of these privileges will make any substantial alteration in the capital structure, a study of the possible change is a necessary part of the analysis of the common stock's possibilities.<sup>1</sup>

But the problem of studying an expanding business goes deeper than making adjustments to render year-to-year figures comparable. The question is one of judging what fruit the growth is likely to bear. Study of the increasing assets and their earnings productivity is helpful, especially when new types of assets such as real estate or outside investments are appearing. Trends in those relationships that bear upon earning power and efficiency should be most helpful when the corporate health is being estimated preparatory to an analysis of the position of specific securities. In a study of the common stock, the ideas suggested in the American Agricultural Chemical Company

<sup>1</sup> For a discussion of the method of measuring the dilution for this type of situation, see H. G. Guthmann, "Measuring the Dilution Effect of Convertible Securities," *The Journal of Business of the University of Chicago*, Vol. XI, pp. 44-50 (January, 1938).

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illustration may be helpful. One reason for such study being more useful for industrial than for public service corporations is that growth possibilities in the former field are usually correlated with profit possibilities, and much asset expansion can be, and is, financed from retained earnings—a situation that is less possible in the latter field, where earnings are limited. Industrials also characteristically change their capital structures by using some part of their earnings to reduce any bonds and preferred stocks.

This distinction between company growth and growth that profits the individual stockholder is extremely important to the analyst. If corporate growth is financed by a proportionate increase in the outstanding common stock, the share of the individual stockholder may appreciate but little or not at all. Some advantage may lie in an opportunity to invest advantageously in the new shares by exercising subscription rights. On the other hand, if the growth is financed by the reinvestment of earnings and the latter earn a high rate of return, the shares of stock may appreciate considerably.

Possibilities of difference are suggested by contrasting the growth and per share book value (adjusted for any stock split-ups or stock dividends) during a decade of rapid expansion for a few illustrative companies shown in the table below. Allowance must be made for the effects of price inflation. The two utilities, American Telephone and Telegraph Company and Pacific Gas and Electric Company, grew vigorously both as to sales and assets but financed chiefly by new security issues that left the investment of the individual stockholder changed but little. The latter company's book value per share actually shrank by \$2.57 per share in 1949 when a plant write-down was made at the instance of the regulatory commission. This amount explains the larger part of the shrinkage in book value for the whole decade. It indicated that the dilution in value resulting from stock sold at less than book value per share was, however, not wholly counterbalanced by the retained earnings for the period. The stockholder did, however, earn a satisfactory dividend return, which could have been reinvested in the new shares to whatever extent his income survived his personal income taxes.

The remaining figures illustrate the higher rate of return and policy of substantial earnings retention of many successful industrial corporations. An unusually high proportion of earnings was retained by some concerns because the speculative nature of the business made

other financing undesirable and by others because it seemed the only desirable method of paying for the inflationary growth of inventories and plant replacements. Much of the increase in book value was needed to offset the effects of price inflation as reflected in the wholesale commodity price index shown at the end of the table.

### SOME ILLUSTRATIVE GROWTH STATISTICS OF SELECTED CORPORATIONS, 1940-1950

(Sales and Common Stock Equity in Millions of Dollars)

Company	Dollar Growth								Percentage Growth		
	Sales		Common Equity		Book Value per share		Sales		Com-	Book	
	1940	1950	1940	1950	1940	1950	1940	1950	mon	Equity	Value
American Telephone & Telegraph*	1,174	3,262	2,499	4,073	134	136	178	263	7	—	—
Pacific Gas & Electric	110	167	219 <sup>b</sup>	316	34.95	31.74	52	44	-9		
United States Steel	1,146	2,947	981 <sup>b</sup>	1,655	48.51 <sup>b</sup>	63.38	157	72	31		
Inland Steel	142	459	105	206	21.17	40.90	223	96	93		
General Electric	524	1,960	309	703	10.69	24.53	274	128	129		
Westinghouse Electric	195	1,020	191	479	18.42	33.72	423	151	83		
McGraw Electric	83	803	42	309	9.09	36.58	867	636	802		

Wholesale price index (USBLS). 1940—78.6, 1950—161.5, increase 105%.

\* Consolidated figures

<sup>b</sup> \$270 million written off in 1935 for obsolescence but restored to surplus after World War II is added in to 1940 common equity to give comparable figures.

Even a casual examination of the financial statements from which the data in this table were compiled indicates that a year by year study of growth in book value and in earnings per share is needed to answer fully the question as to whether the growing company is providing growing values for its stockholders. The approach was illustrated in Chapter VIII. Comparison of retained earnings and book value growth per share will reveal other influences than the former affecting the latter. Such factors as sales and repurchase of shares, mergers, and surplus changes that are not a part of reported earnings may change book value and possible earning power.

Just as large earnings often make possible the expansion of a business that meets a new economic need, the ensuing growth financed by those earnings is likely to reduce the high rate to an ordinary rate of return as the field of operation is extended to include less and less attractive business. An example of diminishing returns, which also serves as an illustrative study of major financial tendencies suitable as background for security analysis, is found in the chain store figures on page 434 for the years 1920-1929. (Note how extreme

FINANCIAL TENDENCIES AMONG LEADING VARIETY AND GROCERY CHAINS 1920-1929

	A AVERAGES FOR FOUR VARIETY CHAINS					B AVERAGES FOR FIVE GROCERY CHAINS				
	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
Earned on Net Tangible Investment—%	17.8	19.4	26.5	26.2	22.0	22.6	19.2	20.2	19.1	16.8
Per Cent of Net Earnings Retained	66.4	77.2	80.2	76.5	76.7	62.6	61.1	59.9	47.8	
Per Cent of Net Earnings to Sales	5.0	6.1	9.5	10.1	9.1	10.2	9.8	10.1	10.2	9.0
Sales to Inventory *	7.0	8.4	7.2	7.2	7.5	7.7	7.2	8.0	8.1	7.5
Net Tangible Investment Turnover †	3.6	3.1	2.8	2.6	2.4	2.2	1.9	2.0	1.9	1.8
Per Cent of Fixed to Total Assets	41.0	35.4	30.2	45.8	51.5	54.5	56.5	61.1	62.5	67.6

\* Three companies used here use of unusual "current of four years" method.  
† Net tangible investment is the sum of bonds and net worth less intangibles.

cyclical fluctuations in business after 1929 made difficult the study and interpretation of data for the ensuing decade )

The percentages of earnings to net tangible investment showed a persistent downward trend after the initial recovery from the crash of 1920, although the rate of return remained at a generous figure at the end of the period. With a high return being earned, expansion was a natural consequence and the substantial amounts actually retained are shown in the table. The proportion retained diminished as the "marginal" investment possibilities appeared less fertile. In the case of the variety chain stores, the reason for the declining return did not appear in either the net earnings margin or the merchandise turnover both of which were without any marked trend. The falling capital turnover, resulting from a growing fixed asset investment unaccompanied by any increase in the net earnings margin, proved to be the unfavorable element. In the case of the grocery chain stores the major factor decreasing the earnings productivity of the investment was the declining margin of net earnings although investment turnover fell somewhat in the last two years.

In the prosperous years 1950 and 1951 both grocery and variety chain stores showed smaller net profit margins and return on invested capital as seen in the following figures :

	(Percentages)								
	Net Profit on Sales				Return on Invested Capital				
	1928	1929	1950	1951		1928	1929	1950	1951
Grocery Chains	28	26	17	11	17.5	17.4	17.3	11.7	
Variety Chains	10.2	9.0	4.8	3.7	19.1	16.8	13.3	10.8	

Although the later figures are for a much larger number of companies, they are probably reasonably comparable. An interesting study might seek to weigh the possible weight of such chief factors

- These tendencies are more apparent in the charts showing the data for the individual companies Harry G. Guthmann and Kenneth F. Miller Some Financial Tendencies Among Leading Variety and Grocery Chains During the Past Decade *Harvard Business Review* January 1931 pp 248-254 Data on profit trends may be traced for various industries in the National City Bank of New York *Monthly Bulletin* (Annual issues) for individual major corporations see *Moody's Manual of Investments*

<sup>1</sup> Data for 1950 and 1951 compiled by National City Bank of New York *Monthly Bulletin*, April 1952 p 40 Figures are not only for a larger number of companies but return on invested capital is return on net worth rather than bonds plus net worth The custom ary absence of bonds in these two fields means the two figures are substantially comparable

as the rising burden of Federal income taxes, increasing competition and diminishing returns, and possibly changes in merchandising techniques.

**Studying financial ill health.** Inasmuch as corporation statements representing infancy, growing youth, and established middle age have been examined, a consideration of failing health or old age would seem to follow naturally at this point. The human analogy should not be pursued too closely, however. Business death is not inevitable. The longer a business survives, the more it is regarded as likely to continue. The essentials are (a) to avoid financial obligations that may precipitate technical insolvency, (b) to continue to meet an "economic" need, and (c) to replenish personnel.

It is only the first test is made when the label of "unsuccessful" is applied to companies. Inability to meet maturing obligations to creditors is a serious matter, and much of the value of statements is the aid they give in detecting signs of its approach. But many concerns are unsuccessful in the broad sense of the word because they are able to make only trifling profits or may even lose money for a considerable period without becoming insolvent. The two distinct problems should be kept in mind in analysis work.

With respect to the matter of solvency, little need be added to what has already been said in earlier chapters except that sometimes too great concern is shown over the use of bank credit. Although short-term bank loans do constitute a hazard if untoward conditions arise, their advantages as a source of relatively cheap funds should be remembered. A large corporation that can sell stock readily may prefer to avoid even moderate hazard. Concerns of small or moderate size are often unable to obtain funds advantageously elsewhere.

Some unsuccessful companies possessed of sufficient liquid resources have been able to avoid insolvency and receivership. The American Woolen Company during the prosperous years of 1924-1929, inclusive, was able to show only deficits in most years. Yet because a substantial part of the deficits came after the deduction of the annual depreciation allowance of about \$2,000,000, and because the original working capital was strong, no insolvency followed even when the depression set in. The record of net profits (after depreciation) and working capital during the following difficult decade as shown in the accompanying table is of interest. The falling price level between 1929 and 1932 made it possible to continue operations

with fewer dollars of working capital without creating any financial problem. In fact, some dividend was paid on the preferred stock in every year following a year showing a profit. The influence of fluctuating woolen prices upon earnings is readily apparent.

## AMERICAN WOOLEN COMPANY

## EARNINGS AND WORKING CAPITAL 1930-1940

(Thousands of Dollars)

<i>Year</i>	<i>Net Profits</i>	<i>Working Capital</i>	<i>Year</i>	<i>Net Profits</i>	<i>Working Capital</i>
1930	4,898 <i>d</i>	52,392	1936	1,930	37,202
1931	2,837 <i>d</i>	40,769	1937	1,855 <i>d</i>	33,764
1932	7,184 <i>d</i>	32,231	1938	4,121 <i>d</i>	30,222
1933	7,219	39,841	1939	2,312	32,749
1934	5,458 <i>d</i>	35,052	1940	3,154	34,635
1935	2,741*	37,938			

*d* = deficit

In studying the record of failed or insolvent corporations, a reader might easily attribute the trouble to operating weaknesses without sufficient emphasis on the working capital position. If one confined attention solely to the earnings statements, the receivership of the Studebaker Corporation, which occurred on March 18, 1933, might be attributed to the "failure tendencies" revealed by an analysis of the earnings. Similar "failure tendencies" might have been discovered in other companies equally well, as is shown by comparing its earnings and net worth with those of Packard Motor Car Company. Actually the sales of the latter company fell more than those of the former, doubtless because of a higher average price per car, and its profits reached the deficit stage a year earlier. However, the loss of working capital by Packard was not sufficient to bring about technical insolvency, that is, inability to meet maturing obligations.

<i>Year</i>	<i>Tangible Net Worth</i>		<i>Net Profit</i>	
	<i>Studebaker</i>	<i>Packard</i>	<i>Studebaker</i>	<i>Packard</i>
1928*	\$ 9,177	\$60,472	\$13,947	\$21,885
1929*	100,613	65,584	11,346	25,183
1930	91,430	64,877	1,000	9,034
1931	84,479	55,223	448	2,909 <i>d</i>
1932	76,633	48,398	8,355 <i>d</i>	

\* Years ended August 31 for Packard.  
*d* = Deficit

The Studebaker receivership grew chiefly out of legal entanglements arising in connection with a proposed merger with White Motor Company, although the severe contraction in working capital caused by the depression played a part. Although the Studebaker Corporation had acquired 95 per cent of the outstanding stock of the White Motor Company, a small dissenting minority blocked the actual merger of assets. This prevented the former company from applying the large liquid resources of the latter company to meet its own pressing obligations, while further borrowing from the banks was restricted by the rigid provisions under which approximately \$15,000,000 of the 6 per cent notes were issued. These notes had been issued, and used, together with cash and stock, to acquire the White Motor stock.

The situation was a difficult legal one bringing on insolvency, which probably would not have occurred otherwise, in spite of poor earnings. Working capital was reasonably good in 1929. The current ratio was even higher than for Packard, although the position of the latter was actually somewhat stronger because of a higher proportion of cash and marketable securities.

**Importance of current external conditions.** When one is inclined to give too little attention to surrounding circumstances, such cases as the following should be brought to mind. The statement of the X Company was quite satisfactory. The earnings were good, a little over 11 per cent on the common stock and over 7 per cent on total net worth. They were representative of previous performance.

It is only when it is learned that the X Company was a brewery that our optimism is changed. After receiving this piece of information, one is not astonished to learn that, shortly after the date of this balance sheet (June 30, 1919), the company suffered a severe change in its fortunes. Although such a company might conceivably adjust itself to prohibition, the fact that, at the time this statement was issued, it faced these trials made a vital difference in the interpretation of the report.

In addition to obtaining the story of solvency and operating success or of failure told in the financial statements, the reader, then, will give due weight in the study of mercantile and manufacturing concerns to such externals as (a) changing price level, (b) cyclical changes in general business, (c) labor conditions, and (d) political factors. Under the last heading of political factors, special attention

must be devoted to changing Federal income tax rates. They have risen to become a dominant factor in the interpretation of reported earnings. As the outlook for future tax rates changes, the significance of past earnings is altered.

## X COMPANY

As of JUNE 30, 1919

<i>Assets</i>		<i>Liabilities</i>
Cash	\$ 614,000	Bills and Accounts Payable
Accounts Receivable	172,000	\$ 91,000
Inventories	718,000	Accrued Expenses
Bills Receivable, Bonds, and Mortgages	5,062,000	106,000
Sinking Fund	574,000	Tax Reserves, etc
Plant and Equipment	16,719,000	425,000
		Bonded Debt
		5,319,000
		Preferred Stock
		6,100,000
		Common Stock
		5,962,000
		Surplus
	<u>\$23,859,000</u>	<u>\$23,859,000</u>

## X COMPANY

## CONDENSED INCOME STATEMENT

For the Year Ended June 30, 1919

Total Net Income		\$1,650,000
Fixed Charges		319,000
Balance		<u>\$1,331,000</u>
Preferred Dividends	\$427,000	
Common Dividends	238,000	665,000
Net Surplus		<u>\$ 666,000</u>

## CHAPTER XVI

### Mining Statements

**Mining ventures.** A mine is a distinctive type of enterprise, because its life is limited by the amount of mineral content. The operating income therefore, must, in addition to yielding a satisfactory return on the capital invested, provide a sum sufficient during the life of the enterprise to return the investment sunk in it. The result is that analysis and valuation of mining statements are different from analysis and valuation for the ordinary business, where income provides for the repair and replacement of parts of the property, and the whole is regarded as having an indefinitely long life. Some exceptional corporations operating in this field, notably some of the coal and petroleum companies, have been able to defer the day of extinction by replacing old properties with new.

The circumstances surrounding mining are so peculiar and outside the ordinary course of business that common knowledge is very untrustworthy; it pictures only the extremes—spectacular fortunes, on the one hand, and on the other, a multitude of stock losses by the less fortunate, who are in the great majority. This view is a very unfair picture of one of the great divisions of American business.

In recent years mineral production has fluctuated from \$6,981,000,000 in 1920, a year of very high prices, to a depression low of \$2,462,000,000 in 1932. In 1940, the figure had recovered to \$5,613,900,000 and in 1949 it stood at \$10,554,000,000.<sup>1</sup> Some 917,000 workers were employed directly in the extraction of minerals. The major division is fuels, of which the chief are: petroleum, bituminous coal, natural gas, and Pennsylvania anthracite. These constituted 43, 20, 3, and 3 per cent, respectively, of the grand total in 1949. The other nonmetallic minerals, of which cement, stone, sand and gravel, and

<sup>1</sup> U. S. Department of Interior, Bureau of Mines, *Minerals Yearbook*, 1940, 1949. A change in the basis for reporting appears to lower the 1949 figure by approximately 23 per cent as compared with data for the earlier years.

sulphur are most important, were 15 per cent of the total in the same year. The metallic group amounted to 11 per cent and in the order of their importance (1938) were iron ore, copper, zinc, lead, and gold.

Voskuil has aptly indicated the strategic importance of three minerals to our present economic society, in his statement that "coal, the reducer and energizer, iron the harnesser, and copper the conductor of electrical energy, by combining and co-ordinating their peculiar properties, lay the foundations of human control of the forces of nature in a truly remarkable way."<sup>2</sup> With the rise of the internal combustion engine, petroleum has taken a place beside coal as a source of energy. The public discussion of the strategic significance of various raw materials under war conditions has probably helped to make the public much more aware of the importance of mining and minerals in our economic life.<sup>3</sup>

**The problem of analyzing mining statements.** The problem of the investor who analyzes mining ventures is to estimate as nearly as possible the prospective income of a given property and the length of the period over which this income will be distributed. The problem is one in geology and mining engineering. It is not necessary to be either a geologist or an engineer to appreciate and understand the reports of these specialists, any more than one needs to be an accountant to read financial statements. However, an understanding of the general facts about mining and the problems which surround a special type of mining enterprise is needed to make possible an intelligent reading of the reports of these specialists.<sup>4</sup>

**Mining opportunities.** Those operating in the field are in a better position to learn of and investigate new opportunities than is the average person. The exploration department of a prominent American company formerly reported the results of its work annually.

<sup>2</sup> Walter H. Voskuil, *Minerals in Modern Industry* (New York: John Wiley & Sons, 1930), p. 23. This book presents a valuable picture of the industry. A bibliography is given, pp. 338-341.

<sup>3</sup> The economic place of and some background facts on the various leading minerals are given in T. S. Lovering, *Minerals in World Affairs* (New York: Prentice-Hall, Inc., 1943) and their international political significance is studied in C. K. Leith, *World Minerals and World Politics* (New York: McGraw-Hill Book Co., 1931).

<sup>4</sup> For a discussion of mine accounting in the context of financial administration, see Frank Wilcox, *Mine Accounting and Financial Administration* (New York: Pitman Publishing Corp., 1949).

These reports serve to indicate the comparatively small number of prospects that are deemed meritorious enough to be developed:

<i>Number of Properties</i>	1910	1911	1912
Presented for Consideration	684	921	694
Subjected to a Preliminary Field Examination	124	144	121
Accorded Complete Examination	46	28	36
Properties Acquired	2	1	4

For the years 1910 to 1915, inclusive out of 4,338 properties presented for consideration, the great majority received only an office examination. Of 679 that received a preliminary field examination, only 166 were given a complete examination. These two figures represent 16 per cent and 4 per cent of the first figure. Only 16 prospects, or about one-third of one per cent, were actually purchased. About an equal number were taken under option. Although more recent data are lacking, this material illustrates the point that of the many prospects, few have the earmarks of economic success when rigidly scrutinized.<sup>5</sup>

When a new territory is opened, the best locations are owned locally, or controlled by large interests who would in the case of a prospective development, be likely to take only an option at the most until sufficient exploration had assured them as to the values present. The left-overs usually provide the properties taken up by stock-jobbing concerns to sell to the public on the basis of the reputation of successful developments in the vicinity. Almost every big mining field has this experience. Prior to the advent of the Securities and Exchange Commission, the spectacular performance of the mid-continent and California oil fields and the gold and silver mines in Canada became the basis for many promotions of a fraudulent or at least doubtful economic character.<sup>6</sup> In more recent years, the

<sup>5</sup> An example of an exploration company is found in the General Development Company incorporated in 1906. This company is a parent corporation examining, developing and financing mining properties which when they have reached the self-supporting producing stage are usually turned over to operating companies.

<sup>6</sup> Edward D. Jones in *Investment* (New York: Alexander Hamilton Institute, 1919), Chapter 18, gives, among other illustrations, the case of silver deposits discovered at Cobalt, Ontario in 1905. In the next few years the provincial government of Ontario had a record of 411 companies with a total capitalization of \$472,396,000. In four years however, only 15 dividend payers were left, and their total dividends for the year 1908 were \$3,646,027.

gold, oil, and natural gas discoveries in Canada, where less stringent securities regulation exists, have spurred a movement of speculative and investment capital from the United States. Unhampered by requirements of disclosure, promoters have been able to whet the appetites of the unwary with glowing opportunities based chiefly upon the success of other ventures. Only the experienced company or capitalist feels able to afford the necessary geologists to examine the ground structure, metallurgists to examine the ore with a view to determining the difficulties of its treatment, and mining engineers to estimate the probable costs of development.

**Element of risk.** Different kinds of mines represent different degrees of safety. Gold, silver, and lead mines would be grouped in the more speculative class, copper mines would form a middle group, and coal and iron mines would represent a more conservative class with a degree of safety comparable to that found in manufacturing companies.

Iron and coal are found in bulky deposits of relatively low value. Before they are mined, there must be an assurance of ore body sufficient to justify extraction. The possibility of a dependable geological survey and the relatively stable demand for such a commodity as coal indicate why a coal property is as predictable as many industrials. On the mining, or supply, side the amount of coal to be extracted and the amount of labor required for the mining can be reasonably estimated. The major risks will be those of an industrial: changing production costs caused by union demands and work stoppages, and changing demand, such as have arisen in the case of coal from the increasing use of petroleum and natural gas for fuel.

A comparatively small quantity of a more valuable mineral deposit would be equally worth mining. The increased value of the ore in question furnishes the business motive for assuming the greater mining risks that are associated with small and variable veins of ore the supply and character of which it is difficult to estimate in advance.

Petroleum properties are usually classed with mines because of their similarity in the matter of exhaustion. The element of risk varies widely for the different companies in the petroleum industry. A company may own merely an option to buy an unproved tract, or it may have a lease on such acreage. With no financial record

on which to proceed, to venture any money in such an enterprise is to gamble on hopes. Drilling in unproven territory is more risky than in proven areas. After wells have begun to produce, some basis for valuation is present, although the period over which they will produce is conjectural. As in some of the Mexican wells, salt water may appear in place of petroleum, cutting their life short. On the other hand, new methods of extraction that will lengthen the expected productive period may be devised. Where a corporation owns a number of producing wells in various well-developed fields, a more certain statistical base exists for estimating future production.

The most stable situation exists for the company with a balanced property, owning producing wells, refineries, and means of transportation and marketing, including pipelines, tank cars, trucking fleets, and filling stations, which reach the ultimate retail consumer. Such a company is a combination of a mining and manufacturing business; and the latter department, consisting of refining and distribution, might continue after the wells had ceased to operate. The usual course for such a business, however, is to add new producing properties constantly to offset depletion of the old.

**Compensating features in competing mines.** The prospect of a higher return has been mentioned as affording a compensating factor for the greater risk that attends the exploitation of the more precious minerals. Between different mineral deposits of the same character, compensating factors with respect to geographical location or costs of exploitation may exist.

Frequently, a favorable point is offset by another that is unfavorable. The Kennecott copper ores in Alaska were extraordinarily rich. They were of two grades, one averaging 12 per cent copper and the other a high grade pure chalcocite ore running in the neighborhood of 70 per cent copper.<sup>7</sup> The porphyry copper ores in the Western states have a large advantage in transportation and general accessibility as compared with the much richer Kantaga deposits in the heart of Africa. In contrast with these rich ores, the Chile Copper Company works a large, low-grade, disseminated deposit that has the advantage of but little covering waste, which makes it possible to mine it with steam shovels on a scale that gives very low mining costs per ton of ore treated.

<sup>7</sup> *Moody's Manual of Investments—Industrials* (1934), p. 1475.

**Classification according to development.** Mining companies may be classified on the basis of the kind of mineral extracted. They are also grouped according to the stage of development, which indicates something of the risk and also the type of financial statement material which will be available. Mines may be found (1) in the development stage and not yet producing; (2) beginning operation; (3) operating and unprofitable; or (4) operating on a profitable basis. In the first two stages, balance sheets may be available, but all estimates of performance will necessarily be based on reports of geologists and engineers. Even after operation, recognition of likely changes may considerably modify the usual significance of past earnings records. In whatever class the property may fall, its valuation must be made independently of the balance sheet, for the asset **Mining Property** is likely to be valued arbitrarily in that statement. Before taking up the detailed analysis of the balance sheet and earnings statement, we shall examine the general problem of mine valuation.

**Mine valuation.** The value of a given mineral deposit depends upon the amount of net income that can be derived from its extraction and sale and how rapidly that income can be realized. This value is not dependent on past earnings, nor on the cost of the development work. It depends on four things: (1) the amount of the deposit; (2) the cost of extraction and treatment; (3) the amount for which the product can be sold; and (4) the length of time during which the product will be sold.<sup>1</sup>

Estimating the first two factors requires the best skill of the geologist and the mining engineer. Even the most able may have considerable difficulty in "seeing through the ground," although methods are available for measuring the probable extent of some deposits. The size of the deposit may be determined sometimes by borings, which give samples that may be treated and assayed to reveal the probable value. This work of measurement and valuation will have a more certain character as development progresses. For the outside analyst the problem of valuation is especially complicated in an undeveloped property.

The "probable costs of extraction and treatment" are estimates of

<sup>1</sup> For a valuable extended treatment of mine valuation see Herbert C. Hoover's *Principles of Mining* (New York: McGraw-Hill Book Co., 1909), Chapters I and II.

unknown accuracy. The determination of production costs is as important as the appraisal of the geological features that govern the occurrence of ore bodies and the matter of tonnage and value of those ore bodies. The location of the property may be unfavorable because of climate, as in the tropics or parts of Alaska, or because of an unstable government likely to be disturbed through revolutions and wars. Governments after granting concessions for mining or petroleum development have changed their requirements as to their share of income either from taxation, or royalties, or share of net income after capital has been invested. However, such adjustments need not be financially disastrous to the concessionaire if negotiated amicably. Transportation is essential for the securing of supplies and for reaching a market for the product. A timber supply may be necessary for underground operation, and water in quantity may be required for ore treatment. Labor must be secured and its productiveness estimated. Frequently, low-priced labor is the most expensive because of its inefficiency. These indeterminate factors show why the established property that can show its record of past performance has an advantage as an investment.

**Ore reserves.** The probable size of ore reserves, then, is the first problem in appraising the mine. The ore reserves are the deposits estimated present and deemed capable of profitable extraction. When they are said to be "blocked out," at least two sides of the deposit are exposed. "Ore in sight" should be so definitely blocked out that its size and character can hardly be mistaken. Such an ore body should be measured and sampled on three and possibly four sides. "Probable ore" should mean that development has taken place on at least two sides. The assumption is that the geology of the mine and the territory are sufficiently known so that the probabilities of the estimate's being substantially accurate are very high. An estimate of "possible ore" is likely to be based on very partial development and geological conditions that indicate that the ore will continue for certain distances. Estimates should, of course, include only mineralized tonnage of sufficient richness to justify commercial exploitation. Because terminology is not always exact, the method of arriving at the estimated reserves should be clearly stated. The best type of reports indicate the quantity of ore reserves under two headings, the first including the amount which is actually blocked out and the amount and quality of which is reasonably certain, and the second any further estimate

of reserves based on mere judgment of general geological conditions and rough exploration.<sup>9</sup>

Difficulties arise in estimating reserves. Two common geological troubles in certain types of deposits are "faulting" and "horses." A vein or stratum of ore is being mined and would, if perfectly formed, extend along in a fairly constant and regular formation. Some disturbance, however, may have pushed the earth up or down at a certain point and produced a fault, or fracture, in which case the vein is broken off. To relocate the vein may be very difficult or impossible. At other times, a fissure containing a valuable vein may, unlike the vein proper, be filled at points with worthless matter, this condition is referred to as a "horse."

Herein lies the advantage of large, easily defined deposits, even though low-grade. A large placer deposit of gold-bearing gravels lying on the surface and lending itself to wholesale methods of treatment might be attractive because of the certainty of the size of the ore reserves in spite of low values per ton. A gold-bearing vein in hard quartz rock might be unattractive because of the difficulty of measuring its extent, even though its value, so far as it showed, was extremely high.

**Cost of mining.** The ore reserves having been calculated, the revenues may be roughly stated, provided a satisfactory average sales price can be hit upon. This step still leaves the problem of mining costs, which might be outlined as:

1. Cost of securing control of the mining property.
2. Cost of equipping and developing the mine.
3. Cost of operating the mine when the production stage is reached. Operating costs will include production transportation, and office or administrative expenses. An allowance for taxes must also be included.

The advantages of the developed mine are that the first two factors are known, and that the last may be judged from past performances. The initial costs mentioned in (1) and (2) represent original investment, and operating costs and taxes (3) will be subtracted from the

<sup>9</sup> Illustrations of stated ore reserves for various types of mines may be found in the reports of Anaconda Copper Company, Island Creek Coal Company, Freeport Sulphur Company, Noranda Mines, Ltd. (copper, gold, and silver), and Hollinger Consolidated Gold Mines Ltd. These companies are reported in convenient form by Standard and Poor's Corporation and Moody's.

annual revenue to give the net income that determines whether the original commitment represented by (1) and (2), is justified.<sup>10</sup> The wisdom of making the original investment, or of buying shares after the operations are under way, will depend not only upon the amount of the net income but also upon the time necessary to obtain it.

The time element is vital. If \$1,000,000 is invested in a mine and the owner finds himself, after a period, possessed of an exhausted mine and of \$2,000,000 in cash, his rate of return will depend on the length of the period during which the original \$1,000,000 was tied up. If the process of doubling has taken 20 years, the investor will have realized  $3\frac{1}{2}$  per cent (interest compounding semiannually), and might better have purchased gilt-edged securities that would have accomplished the same result in less time and would, in any case, have incurred far less risk. If the period of extraction could be shortened, the mine would become a correspondingly more attractive purchase. Thus, if the investment were doubled in 12 years, the return would represent 6 per cent compound interest, and if it were doubled in seven years, a return of 10 per cent compound interest.

**Problem of present value.** For the purpose of illustrating the procedure for obtaining the commercial value of a mine, we shall consider a silver mine with ore reserves about exhausted. The remaining reserves which are blocked out show 750,000 tons. It is estimated that the ore will yield \$2 per ton gross, and that the operating expenses will amount to \$1.60 per ton. Mined at the rate of 250,000 tons per year, the net recovery will be \$100,000 each year for the three years required to strip the mine.

If it is assumed that 10 per cent per annum is a reasonable return, and that the investment as well as interest must be returned during these three years, the problem may be solved as follows:

Let  $X$  = the present value of the property, which is to be found.

$a$  = the installment to be set aside at the end of the first year for replacing the depreciating investment

$b$  = the installment of the second year.

$c$  = the installment of the third year.

Then  $X = a + b + c$ .

That is, the sums set aside each year,  $a$ ,  $b$ , and  $c$ , must equal the original investment when totaled. The dividend received each year

<sup>10</sup> It may be stated, as a general rule, that there is never a sufficient amount of the above data available before a mine is actually producing to justify the small or average investor in making an investment.

consists of two things: (1) the installment for that year, representing return of principal invested, and (2) 10 per cent interest on whatever investment has not been returned. Then, it follows

$$\text{The first year } \$100\,000 = a + 10 \text{ per cent of } X$$

$$\text{The second year } \$100\,000 = b + 10 \text{ per cent of } (X - a)$$

$$\text{The third year, } \$100\,000 = c + 10 \text{ per cent of } (X - a - b)$$

With these three equations, and the original one ( $X = a + b + c$ ), it is possible to find all of these four unknown quantities, on the general algebraic principle that there must be as many equations as there are unknown values—in this case  $X$ ,  $a$ ,  $b$ , and  $c$ —in order to make a solution possible. The solution yields <sup>11</sup>

$$a = \$75\,131.48$$

$$b = \$82\,644.63$$

$$c = \$90\,909.09$$

$$X = \$248\,685.20$$

Stated in tabular form we have

	Amount Available	for Returning	Investment	Interest	10 Per Cent	Dividends
First Year						
Second Year						
Third Year						
	<u>\$300,000</u>	<u>\$51,314.80</u>	<u>+</u>	<u>\$248,685.20</u>	<u>+</u>	<u>\$100,000</u>

<sup>11</sup> For the reader who wishes to refresh his memory on the solution of simultaneous equations, one possible procedure is given.

- (1)  $X = a + b + c$
- (2)  $\$100\,000 = a + 10X$
- (3)  $\$100\,000 = b + 10X - 10a$
- (4)  $\$100\,000 = c + 10X - 10a - 10b$
- (5) Subtracting (3) from (2)  $0 = a - b + 10a$
- (6) Rearranging  $b = 11a$
- (7) Substituting this value in (3)  $\$100\,000 = 11a + 10X - 10a$
- (8) Similarly in (4)  $\$100,000 = c + 10X - 10a - 11a$
- (9) Subtracting (4) from (8),  $0 = c - 11a - 11a$
- (10) Rearranging  $c = 22a$
- (11) Substituting (10) and (6) in (1)  $X = a + 11a + 22a$
- (12) Or  $X = 33a$
- (13) Substituting (12) in (2)  $\$100\,000 = a + 33a$
- (14) Solving  $a = \$75\,131.48$

Values for the other unknowns may be obtained by substituting this value for  $a$  in (6), (10) and (12).

The three equal annual payments of \$100,000 have a value of \$248,685.20; for, from the \$300,000 received, a buyer would be able not only to recover this original outlay, but also to pay himself 10 per cent on the investment while it is tied up. If, then, this mining property had a capitalization of 100,000 shares of stock, the present value of each share could be placed at \$2.48.<sup>12</sup>

The virtue of the generalized solution is that it would be equally applicable if the amounts varied from year to year, or even if the amounts received were deficits in certain years. In most situations where the mine is in actual operation, the assumption is likely to be that the net income will be a certain regular amount for a given number of years. The estimated annual income is likely to be based on the earnings results for the years immediately preceding the time of the estimate, with allowance for possible and probable changes in the near-term future in (a) the market price of the product being recovered, (b) the costs of operation, and (c) changes in the volume of recovery per year. From time to time, changes in the market rate of interest will raise or lower the rate at which expected future profits are discounted. The market value of a mining company's stock, which represents the collective estimate of these several variables, may also change with the passage of time. With new development, the amount of known ore reserves, which determine the life expectancy of the property, frequently increases. Sometimes the past record of continuing development or mine purchases has been so regular that the corporate life is regarded as perpetual.

With the assumption that income is to be constant for the expected life of the property, the formula for obtaining the present value of an ordinary annuity is applicable, and a solution can be obtained simply by the use of appropriate tables. An illustration of

<sup>12</sup> A similar illustration is given by Floyd Davis in *The Mine Investors Guide*, Chapter III. For those interested in the mathematical theory of the subject and its practical illustrations, reference may be made to J. C. Pickering, *Engineering Analysis of a Mining Share* (New York: McGraw-Hill Book Co., 1917); J. R. Finlay, *The Cost of Mining* (New York: McGraw-Hill Book Co., 3rd ed., 1920); and Herbert C. Hoover, *Principles of Mining*, Chapter V. Some mine valuation formulae employ unrealistic assumptions, such as the accumulation of a sinking fund at a lower rate of interest to be employed for the ultimate redemption of the investment. C. H. Baxter and R. D. Parks, *Examination and Valuation of Mineral Property*, Part II, *Mine Valuation* (Cambridge, Mass.: Addison-Wesley Press, Inc., 3d ed., 1949).

selected figures from such tables is given below.<sup>13</sup> The number of dollars "expected per year is multiplied by the amount shown in such a table for the desired number of years at the desired rate of interest. The table shows that the property discussed above with an annual income of \$100,000 for three years would have been valued at \$257,710 if an 8 per cent rate had been used rather than 10 per cent, and \$272,320 if 5 per cent had been used. The table shows how the amount of value added by each additional year of life grows smaller as the span of years increases. This lesser importance of the later years of income is most marked as the rate of interest increases.

*Present Value of \$1 per Annum at Compound Interest*

Years	5%	6%	7%	8%
1	0.9524	0.9434	0.9346	0.9250
3	2.7232	2.6730	2.6243	2.5771
5	4.3295	4.2124	4.1002	3.9927
10	7.7217	7.3601	7.0236	6.7101
15	10.3797	9.7122	9.1079	8.5595
20	12.4622	11.4699	10.5940	9.8181
30	15.3725	13.7648	12.4090	11.2578
50	18.2559	15.7619	13.8007	12.2335
100	19.8479	16.6175	14.2693	12.4943
Perpetual	20.0000	16.6667	14.2857	12.5000

Insofar as there may be reserves not blocked out, the valuation for a share of stock is not subject to exact calculation. Because of the past achievements of the management in discovering new reserves, shares may sell on a basis that makes little or no allowance for the exhaustion of the mine. Such shares may, without any market manipulation, show a premium that can be accounted for only on the basis of prospective ore reserves yet to be discovered and blocked out.

**Importance of early profits.** The relative importance of early returns, particularly when the rate of return sought is high, can best be

<sup>13</sup> These figures are drawn from the fuller tables given in the *Handbook of Financial Mathematics* (New York: Prentice-Hall, Inc., 1929) by Justin H. Moore, pp. 1100-1109. The formula for the annuity is,

$$A_{n,i} = \frac{1 - (1+i)^{-n}}{i}$$

For a discussion of the valuation of annuities consult Chapter 6 and following chapters in this handbook.

illustrated by the following table showing the present value of a \$10 annual return to be paid for different periods of time. For the sake of vividness the values stated are given to the nearest dollar.

PRESENT VALUE OF A \$10 ANNUAL RETURN WHEN INTEREST RATE IS  
5 10, 15, OR 20 PER CENT

Years Paid	5%	10%	15%	20%
5	\$ 43	\$ 38	\$34	\$30
10	77	61	50	42
15	104	76	58	47
20	125	85	63	49
25	141	91	65	49
30	154	94	66	50
Perpetual	200	100	67	50

The table emphasizes the statement previously made that income in the later years diminishes in importance when the rate is high. Thus, if risk is such that a rate of 15 per cent is demanded a share earning \$10 for five years has a value of \$34, while the value would be increased only to \$66 or a bit under two times as much, if the return were to continue for six times as long or 30 years.

The importance of considering a part of the dividends as a return of capital has led some companies in declaring dividends to state that they are partly from earnings and partly a return of capital. The Kennecott Copper Corporation reported such a division of its dividends as follows:

Year	Dividends	From Surplus	Capital Distribution
1932	\$0 12 <sup>1</sup> / <sub>2</sub>	\$0 12 <sup>1</sup> / <sub>2</sub>	
1931	1 50	30	\$1 20
1930	3 75	1 92	1 93*
1929	5 50	5 30	20
1928	5 25	5 19	06
1927	5 00	2 15	2 85
1926	4 00	1 97	2 03
1925	3 00	1 07	1 93
1924	3 00	58	2 42

\* The United States Treasury Department ruled that the nontaxable portion of dividend should be \$2 47 in 1930.

No part of dividends declared after 1931 was reported as capital distribution.

Such "capital" dividends are based upon the gradual reduction in the assets of the mining company as a result of depletion and depreciation. These sums would be needed in the business if new mines were purchased to take the place of depleted ones and depreciated equipment was replaced. When a return of capital is made to stockholders,

the accounting is based upon the cost of the properties to the corporation. The stockholder, however, may have bought his shares for more or less than book value, hence, these capital distributions may be under or over the amount required to write off his investment, even though the total disbursements of this sort are exactly equal to the book value of the company's property.

Furthermore, the stockholder who is interested in the return of his investment on an "actuarial" basis such as was suggested in the discussion of valuation above would write off his investment in unequal amounts. In the case of the mine valued at \$248,685 he would have used \$75,131 of the first year's \$100 000 received to write down that value, in the last year, the amount so used would have been \$90,909. On the other hand, if the company employed the most common method of depletion write-off it would have allowed equal amounts in each of the three years because of equal production.

Of major importance are these differences between the principal sum that the investor has to recover during the life of a mine in order to keep his capital intact and the corporate distributions that the income tax law will permit him to treat as nontaxable recovery of principal. When income tax rates are high a wealthy investor may find that ordinary dividends will yield less, after allowing for personal income taxes than is necessary to recover principal. He may see nothing but a prospective net loss after taxes. Consequently an analysis of the probable character of corporate distributions from a tax standpoint may be as important as projecting the income stream itself. An investor may, on the other hand discover a corporation able to make nontaxable capital distributions which from his point of view will really be income because they will leave him with shares that will still have more value than his original investment.<sup>14</sup>

**Working capital.** Thus far this chapter has been concerned with the problem of mine valuation. Such information as may be gained from a scrutiny of the statements will now be considered. In a study of the balance sheet the current asset figures are likely to be more significant than those for the fixed assets, because they present defi-

<sup>14</sup> Such a possibility should be regarded as offering tax reduction rather than tax escape. Capital distributions that are nontaxable at the time of receipt reduce the book cost and increase by so much any future capital gains. Because capital gains are taxed at lower rates than ordinary dividends fields such as mining that offer large possible capital gains are particularly attractive to the wealthy individual investor.

nite values whereas the valuation of the fixed assets is of necessity more or less arbitrary, although it may represent historical cash cost. The current value of the fixed assets will vary with changes in estimates of the extent of the ore reserves, the price of the product, and operating costs.

The current assets should include enough to meet current expenses, provide for emergencies, and care for current development. An excessive balance, however, would be undesirable, in that it would not earn an amount commensurate with the yield on invested funds actively employed in this field.

Accounts receivable vary with the type of output, but will tend to be small, because credit is not usually extended by the producers of staple raw materials. When manufacturing and merchandising functions are assumed, as in the case of the petroleum companies and certain major copper and aluminum companies selling on credit and consequently accounts receivable become more common. The inventories consist of ores and fabricated products.

Gold, used as standard money, has had a fixed price in this country for long periods with no change in the current century except for the revaluation during the monetary crisis of the early 1930's. Other mine products vary widely in price from time to time. Coal and other mineral products of which quantities are sold for domestic consumption will tend toward greater price stability than iron or steel, which are used chiefly in construction. Construction materials, which the economist calls "production" goods, as distinguished from consumption goods, are subject to more violent fluctuations in demand. When known deposits of a mineral are limited and controlled either by a single company or by a few companies that are inclined to maintain prices, an artificial stability may be achieved.<sup>15</sup> Volume may suffer

<sup>15</sup> With aluminum a special cost factor enters the picture. Its price has been exceptionally stable even after Aluminum Company of America ceased to be the sole producer. Electricity is an important cost element. Some ten kilowatt hours are used in the production of a pound of metal. Power costs have been very stable. A prime necessity for economic aluminum production is a large supply of cheap power. Canada, a major producer, hauls the bauxite ore from the tropics to take advantage of its cheap water power not required for other industrial uses. A study of monthly price fluctuations will help toward an appreciation of the problem of fluctuating prices for the various mine products such as coal, copper, nickel, silver, crude oil, and the like. Such material may be found in convenient form in the *Statistical Bulletin* of the *Standard Trade and Securities Service*.

as a result, and often the indirect competition of substitutes threatens such monopoly positions.

Current liabilities normally will be relatively insignificant. The risks incident to mining make it unwise to use short-time borrowed capital to conduct operations. Production will be carried on ordinarily only as an available market exists, so that as a rule inventories will also be small. However, many mine products are staple commodities, and in an emergency might serve well as a basis for credit. More substantial amounts of receivables and inventories would be expected when the company engages in processing or fabricating its raw materials.<sup>16</sup>

An unusual method of financing was carried through when the boom after World War I subsided and the copper companies found themselves with heavy stocks of refined copper that were without a market. The Copper Export Association was formed by the principal American producers, and 400,000,000 pounds of copper turned over to it at ten cents per pound. In order to secure the cash needed by the copper companies, the association sold \$40,000,000 of notes to be retired over a period of not more than four years. This operation removed the worst of the glut from the domestic market, because it was agreed that the copper should be withdrawn for export business only; and the plan proved successful in accomplishing its purpose.<sup>17</sup>

**Fixed assets.** The amount of the fixed assets in the balance sheet is a matter apart from the actual current value of such assets. The former depends upon the cost of these assets; the latter, as discussed under the head of mine valuation, is dependent upon the prospect of future earnings rather than upon the cost of securing and developing the property, or even upon the past earnings.<sup>18</sup> An examination of

<sup>16</sup> The integrated oil companies previously mentioned are examples. In 1922, the Anaconda Copper Mining Company acquired practically all the capital stock of the American Brass Company, the largest domestic fabricator of copper. The result is a combination of two types of business.

<sup>17</sup> In the years 1928-1932 the Anaconda Copper Mining Company showed large inventories and considerable current debt, the latter rising from \$51,740,903 to \$79,731,792, and the bulk of the latter figure was the \$70,500,000 of notes payable. The current ratio fell from 2.3 to 1.2. This threat to solvency was subsequently removed by long-term debt financing.

<sup>18</sup> The limited usefulness of financial statements for exploratory mining corporations is suggested by the Securities and Exchange Commission's dispensing with certification of such statements in registering assessable mining shares not to exceed \$100,000 in one year (1945). Form S-11 for such cases and the accompanying booklet digest. Commission views relative to this type of business.

the Fixed Asset account may be fruitful, however, particularly over a number of years, in disclosing something of the corporation's policy. Development work is consistently charged off against operating income over a very short period by the well-managed companies.

**Mines and mining rights.** The actual cost of the mining property, as distinct from the cost of its development, should be separately stated. Inasmuch as the original mines almost invariably come into the possession of the company through the issuance of stock, the amount could represent an extravagant capitalization of hopes or a nominal figure. Conservative rules are established by the Securities and Exchange Commission for corporations that wish to sell securities to the public and come within its jurisdiction.<sup>10</sup> Current accounting standards are also more conservative than formerly. In well-established companies, where mines or "prospects" may have been secured by special exploration work, the cost may have been buried in the Expense account.

An unusual treatment, designed to advertise ore reserve discoveries was formerly employed by Climax Molybdenum Company. The fixed assets showed an increase in the Discovered Increment in the mine value from \$3,692,390 to \$74,131,250 in accordance with a survey as of January 1, 1935, and approved by the stockholders. This separate item of Discovered Increment at Appraised Value was stated at the latter amount until 1948, when the deduction for Accumulated Depletion had grown to \$34,472,761. The balance of book value amounting to \$39,688,489 was counterbalanced by an equal Discovered Increment Surplus after the ordinary surplus account. Both asset and surplus items were eliminated from the balance sheet in 1949.

This case is a special example of surplus arising from revaluation. Depletion on this item, unlike other depletion, was excluded from operations and charged directly to the Discovered Increment Surplus.

Properties are not always secured by outright purchase. They may be leased, or an option to purchase may be taken. Such contracts are frequently made by the promoters of "wildcat" companies and were formerly placed in the balance sheet at a handsome figure.

<sup>10</sup> Illustrations of accounting practice for mines and leaseholds for companies in the promotional stage are given in B. B. Greider, *Preparation and Certification of Financial Statements* (New York: Ronald Press Co., 1950), pp. 91-105.

Leaseholds are not likely to appear at a high value in the balance sheet of an older and established company. The actual worth in either case is, of course, independent of the accounting and will depend solely upon the possibility of profits.

**Mining equipment and development.** Mining equipment and the cost of bringing the property to a productive stage should be stated under a second heading, although they are often lumped together in the balance sheet with the cost of acquiring the mines. A young or unsuccessful company may be tempted to treat replacements as improvements, and add them to the asset and so inflate that item. The changes in the asset should be traced from year to year. If new equipment has been added, it should be remembered that old equipment may have been retired and should in that case have been written off.

The following statement of principle, covering this point, was adopted by the Council of the Institution of Mining and Metallurgy on December 20, 1910, as a part of a report submitted by the Mine Accounts and Cost Sheets Committee.<sup>20</sup>

After the Producing Stage is Reached, no expenditure should be charged to Capital account (that is, the Asset account) except large special items, such as (1) purchase of additional property; (2) erection of additional buildings, machinery, plant, or surface works which may be necessary either to increase output, to improve recovery, or to decrease costs. Such items of capital expenditure should bear their proportion of the administration and general charges. If any existing shafts, machinery, plant, or buildings should be entirely superseded and replaced, the cost of the old items should be written off Capital to Profit and Loss either at once (if small) or in the case of large items by installments spread over as short a period as the responsible engineer may recommend. All repairs, maintenance, and replacements of minor machinery and plant should be charged to Working Costs.

In recognition of this principle, the balance sheet should set forth the development as a separate account. The balance sheet of the Kennecott Copper Corporation showed, on December 31, 1951:

Mining Properties, Railroads, Plants, and Equipment	\$402,203,773
Less Reserves for Depreciation	169,972,206
Net Property Account	\$232,231,567
Deferred Charges for Stripping and Mine Development	36,054,096

<sup>20</sup> Report given in *Mines Accounting and Management*, by L. R. Dicksee (London: Gee & Company, 1914), p. 79.

The amount of development work regarded as expense is often stated in the income statement and may be studied in connection with the asset. Development costs are deferred charges to be written off as rapidly as that portion of the mine is exploited. When corporate income tax rates are regarded as temporarily high, a company with the means, as so many larger companies are in the petroleum field, has a strong incentive to spend heavily for exploration and drilling. Any losses are charged off immediately. Any discoveries will benefit future income.

**Deferred charges.** Many mineral deposits are situated comparatively near the surface. The Chile Copper Company's deposits were previously mentioned as of this character. Phosphate rock, such as is used for making fertilizer, and some coal are obtained by strip mining. In such cases, the cost of stripping off the overburden, which corresponds to development, will ordinarily be carried as a deferred charge until the underlying deposit is removed. When that is done, the item is charged to the cost of the product.<sup>21</sup>

**Depletion and depreciation.** Allowances for depletion and depreciation reflect the exhaustion of natural resources and of plant and equipment, respectively. Some corporations in the nonferrous metals field show no depletion in their accounts, reporting depreciation only.<sup>22</sup> Wherever such an omission is at all common, it will be usual

<sup>21</sup> An unusual example of this asset is found in the annual report of Eureka Corporation Limited, whose Deferred Development and other expenses of \$4.5 million constituted almost two thirds of its \$6.9 million total assets (1951). Failure to continue development and operations gives the lessor of their property the right to cancel the lease on 30 days' notice. It is interesting to compare the market valuation of this company at \$1.50 per share (Dec., 1951), or \$7.3 million for its 4,851,455 shares, with that of Calumet and Hecla Consolidated Copper Company at \$9 per share, or \$18.6 million for its 2,068,270 shares, which includes a net working capital after all debt of \$8.7 million, leaving a mine valuation of \$10.0 million.

<sup>22</sup> H. B. Fernald, M. E. Peloubet, and L. M. Norton, "Accounting for Non-ferrous Metal Mining Properties and Their Depletion," *Journal of Accountancy*, August, 1939, pp. 105-116. Pertinent to this discussion of depletion is a recognition of the elasticity of estimates of mine life, especially where based on *developed* ore reserves. In 1941, such reserves were stated as equal to about 13 years' production for Homestake Mining Company; but it was noted that *known* reserves were larger than in 1929. *Barron's*, April 21, 1941, p. 13. Ten years later such reserves were sufficient for 16 years of life. "Homestake vs. Kerr Addison," *Barron's*, May 21, 1951, p. 9. This latter article provides a comparative analysis of the largest gold producers in the United States and Canada, respectively.

to study all companies' earnings on a before depletion basis. Probable life of the various properties becomes a separate consideration. Kennecott Copper Corporation, whose figures were used in the illustration above, makes allowance only for depreciation. Details of the fixed property account are especially necessary in such cases to be able to know what portion of the total is being depreciated.<sup>23</sup>

Cerro de Pasco Corporation showed at the end of 1950 reserves for depreciation and depletion of \$70,993,900, or 7½ per cent of the total properties of \$100,461,551. A detailed statement of the properties showed these accumulated allowances represented 100 per cent depletion for coal mines and 47 per cent for metal mines, 83 per cent depreciation for plant and equipment, and 50 per cent for railroad property. Granby Consolidated Mining, Smelting & Power Company, Ltd., in 1950 showed a depletion reserve of 95 per cent for its mines, mineral and timber lands at \$1,986,772, and depreciation of 82 per cent for its real estate, buildings, plant, and equipment at \$5,675,816. Noranda Mines, Ltd., in 1950 showed only a reserve for depreciation, which was equal, however, to 83 per cent of the \$17,866,215 total for fixed properties. An examination of the detailed figures shows that mines property was a relatively nominal part of the total, being carried at a cost of but \$919,779, or less than 5 per cent of the total. Inspiration Consolidated Copper Company had a substantial investment in mines, mining claims, and lands amounting to \$17,530,702, but showed no depletion allowances, although depreciation of 71 per cent had been accumulated against its \$24,401,852 of buildings and equipment.

It was suggested earlier that the possibly arbitrary and historical character of the asset, Mines, resulted in its having small significance for the analyst. The wide variations in the accounting for both the asset and depletion shown by these illustrative cases offer another reason for attempting a valuation independent of the balance sheet figures.

The heavy income and excess profits taxes of the Federal government initiated during World War I led many companies to set up

<sup>23</sup> Kennecott Copper reports only the combined fixed assets in its annual report. It is required to report the details to the Securities and Exchange Commission. These details are reported in *Moody's Manual of Investments*. Thus, in 1949, 39 per cent of its gross properties consisted of mines and lands and only the remainder was depreciated.

valuation reserves for the first time. Some pursued the policy of allowing as large amounts as would be permitted by the taxing authorities. This practice reduced current taxable income, but may prove to have been ultraconservative, at least in some cases, and expose the company to correspondingly higher taxes in later years. Immediate and certain savings are regarded as worth considerably more than those which lie in the future and are uncertain. Balance sheet allowances may not correspond with those allowed and used for income tax purposes. In some fields, depletion is allowed for tax purposes as a certain percentage of revenues without regard to the cost of the mineral deposit. Such an allowance is designed partly to encourage exploration and discovery and partly to compensate for losses on exploration that the taxpayer may not be able to use for tax reduction purposes at the time they occur.

**Miscellaneous asset accounts.** Other non-operating assets are usually small or absent in mining companies. Exceptional in this respect is McIntyre Poreupine Mines, Ltd., a Canadian gold mine, which has a substantial portfolio of American securities.

"Profit and Loss" or "Deficit" may appear on this side of the balance sheet. Either of these is useful only in calculating the book value of the stock, and, as was previously stated, the book value of mining stock is not regarded as significant as in other types of business. The presence of this account may be due to the return of a part of invested capital, as will be explained later in the case of the Goldfield Consolidated Mines Company. Such a practice is permissible for mining companies.

**Capitalization.** A funded, or bonded, debt is occasionally founded on the liability side. Because of the variability of profits in mining, it is not a usual means of securing funds. The exhaustible character of the property makes a rapid retirement of any outstanding securities, other than the common stock, sound practice. A series of unfavorable circumstances might make impossible the payment of the fixed interest charges. In such a case, the stockholders would stand the chance of losing their property. Only the most stable mining enterprises should try to seek capital in this manner, and then only in comparatively small amounts. A few of the large copper and coal companies with well-established mineral reserves have used bonds to meet emergencies or acquire desirable properties. Bonds are com-

mon among the larger petroleum companies. The customary form of security issued by mining companies, however, is common stock.

**Illustrative balance sheet.** The condensed comparative balance sheet of the Island Creek Coal Company illustrates the qualities of a strong mining company in a field which has suffered from keen competition. As a result of natural advantages and efficient operation, the company has the lowest costs of any of the major producers in the bituminous industry. By lowering dividends, it continued the working capital in a strong position through the depression years following 1929. The United States Government obligations in 1951 amounted to more than one sixth of the book value of the assets and represented an unusual accumulation for a mining company. Such strong cash resources would permit the company to acquire properties on a favorable basis should that appear desirable. The working capital was so strong in both years that all of the preferred stock could have been retired at its call price of \$120 without difficulty. (Note its nominal par value.)

A study of the unmined coal reserves and the earnings in recent normal years indicates that the fixed assets are carried at values substantially less than going current values. This conclusion is supported by the record of market prices paid for the stock. If the net income should move to a different level, a new analysis and valuation of the property would have to be made. Whenever a substantial amount of free working capital in the form of marketable securities is present, as in this case, the analyst estimates its value apart from the mining properties. He arrives at a total by combining the result with the estimated valuation of mines, rather than by capitalizing all income from both operating and nonoperating sources to obtain a lump value which would be very inaccurate. Such a method would in this case have involved capitalizing income from Government obligations and from a coal mine in a single computation.

**Income account.** The Income account is usually greatly condensed. The gross sales, the operating expenses, depreciation, and amortization or depletion should be stated separately in even the most condensed report. The operating expenses will consist of labor, salaries, supplies, and the like, spent to obtain and market the product. Allowances for depreciation and depletion have already been touched upon in the preceding discussion. Depletion allowances, al-

though reducing the net profit for the period, need not reduce the dividend, they merely serve to indicate that a portion of the dividend is a return of capital. Such a portion might properly be called a liquidating dividend, and the balance would represent profit.

**ISLAND CREEK COAL COMPANY**  
**COMPARATIVE CONSOLIDATED BALANCE SHEET**

As of December 31

(Thousands of Dollars)

	Assets	1951	1940
Cash	3 404	4 140	
U. S. Government Securities (at cost)	4 489	—	
Accounts and Notes Receivable (net)	6 949	2 168	
Inventories*	6 021	906	
<b>Total Current Assets</b>	<b>20 863</b>	<b>7 214</b>	
Invest in Carnegie Dock & Fuel Co	1 060		
Investments and Other Assets	1 078	83	
Property, Plant and Equipment*	39 931	25 720	
Less Deprec., Deplet. & Amort. Reserves*	23 367	13 004	
<b>Net Property Account</b>	<b>16 564</b>	<b>12 716</b>	
Deferred Charges	9 1	176	
<b>Total Assets</b>	<b>39 456</b>	<b>21 250</b>	
<i>Liabilities</i>			
Account and Drafts Payable	1 286	534	
Accrued Payroll Taxes, Interest, etc.	1 271	207	
Federal Income Taxes†	1 162	899	
Dividends Payable	38	38	
<b>Total Current Liabilities</b>	<b>5 760</b>	<b>1 664</b>	
Funded Debt	—	300	
Deferred Income	685	35	
Reserve for Insurance and Contingencies	—	411	
Workmen's Compensation Reserves	—	66	
Minority Interest in Subsidiary	—	8	
\$6 Cum. Preferred Stock (par \$1)	25	25	
Common Stock (par 50¢)	594	594	
Paid-in Surplus	11 580	11 125	
Earned Surplus	20 812	7 018	
<b>Total Liabilities</b>	<b>39 456</b>	<b>21 250</b>	

\* More detail in original balance sheet.

† After deduction of \$270 U. S. tax net in 1951.

Some few managements pursue what might be called a practical equivalent. They charge the cost of discovering new deposits and a large part of development costs to expense, instead of showing them as additions to the assets. Such a practice might serve to maintain

or even increase the original worth of the corporation's shares. A clear statement would show separately the amounts spent for development work. The better type of annual report often gives considerable information on work of this sort.

Depreciation for those equipment or plant units that will not require replacement because they are serviceable for the life of the mine occupies a position similar to depletion. Allowances for depreciation reduce net income but not the sums available for distribution to the stockholders, unless certain units will require replacement before the life of the mine expires.

In studying the Income account, the conservative practice is to regard the net income after depreciation but before depletion as representing the balance available for either distribution or the acquisition of new properties, on the theory that the extent to which depreciating assets will require replacement is unknown to the reader. When information is available to show the approximate amount of depreciation attributed to assets that will continue serviceable for the life of the mine, such sums can be regarded in the same light as depletion in estimating what the security holders may recover from the operations. A peculiarity of depreciation practice in mining is that the plant investment usually has only scrap value after the mine is exhausted, and so it must be written off over the life of the mine rather than over the normal service life whenever the former period is shorter than the latter.

This description of the character of depletion and depreciation does not justify the suggestion sometimes made that dividends may be paid out of the reserve accumulated to allow for their accrual. If the valuation reserve were reduced by dividends representing a return of capital to the stockholder, it would amount to writing up the book value of the fixed property, which should decline with the exhaustion of the mineral deposit. If capital instead of earned surplus is being distributed, the proper account to reduce is Capital Stock, or an offsetting account, Capital Distributions, may be set up. The excess of Capital Stock over Capital Distributions would represent the unreturned balance of the stockholders' investment.

The Income account of the mining company differs chiefly from that of the ordinary manufacturer in the presence of depletion and the similarity between depreciation and depletion in the former. Because the larger oil companies have pursued a policy of replac-

ing plant and crude oil reserves, they are different from the usual concern operating a mineral deposit with a relatively limited life expectancy. The depletion, depreciation, obsolescence, and development expenses are all deducted in judging earning power, in spite of the indication of concealed income in the large total of these charges for some companies.

For income tax purposes, oil and gas and some mining enterprises are permitted to deduct depletion expense as a percentage of revenues without regard to the cost or life of the depletable assets.

**Undistributable earnings.** After a careful analysis of the operations, it is well to make allowances on the general principle that all realized profits do not reach the dividend stage. One engineer estimates that from 20 to 30 per cent will be absorbed "by more or less standard charges and by the ordinary vicissitudes of mining."<sup>24</sup> It is well to study the profit and loss statement in close connection with the balance sheet. The latter will indicate whether the undivided earnings were used as working capital or were tied up in fixed assets. If an unduly large percentage is withheld and apparently used in adding to the fixed assets, it should be discovered whether these "additions and improvements" are genuine capital increases or merely items that should have been treated as current expenses.

**Unit costs.** It is customary to figure the income and the operating costs on a per-ton-of-ore basis, and such per-ton figures are useful in connection with the problem of mine valuation discussed in the early part of this chapter. Per-ton costs can be checked against similar figures of the same company in other years. Fluctuating prices, such as have been seen in recent years, have made such comparisons from year to year of little value in measuring relative efficiency. Both income and expenses have shown unexpected rises and falls. The costs per ton of a company should not, however, increase out of proportion to the value of the recovered product. If they do, the weakness that may be increasing development costs or decreasing recoveries should be sought.

Satisfactory comparisons between different mines cannot be made on a per-ton basis. Low-grade ore must of necessity show relatively low per-ton costs as compared with richer deposits in order to offset the lower value of the per-ton recovery. Consequently, mines with a like mineral are more appropriately compared on the basis of the

<sup>24</sup> J. C. Pickering, *Engineering Analysis of a Mining Share*, p. 49.

cost per unit of product. If a mine produces at a relatively high cost per unit, it will suffer the more from any decline in the price of its product.

Unit costs will vary from year to year, being chiefly affected by (a) the movement of the general price level, (b) changes in the character of the mineral deposit, and (c) the flexibility of costs as the volume of production varies. As general prices move up or down, the cost of supplies will tend to move in the same direction, as will the important labor costs, although the movement of the latter is much more laggard. The mineral deposit may become more difficult to extract as development progresses, although sometimes it becomes richer or improvements are made in the method of mining or the process of ore treatment so as to reduce costs. The fewer fixed expenses, such as maintenance or pumping costs, the more likely are total expenses to be adjusted satisfactorily to a reduced volume of output in a depression period. Thus, the properties of the Kennecott Copper Company located in the United States are worked by open-pit or caving mining methods, which give flexible operations as well as low costs. Although the output of its Utah property was only 69,463,000 pounds of copper in 1933, as compared with 296,625,000 pounds in 1929, production costs, including all charges except Federal taxes and depletion, were 6.45 cents per pound in 1933, or slightly less than in 1929.<sup>25</sup>

Another helpful way of thinking of the cost is as a per cent of the selling price, or as the operating ratio, used so frequently in other fields. In mining also, it shows how well a decline in the price of the output can be borne. A mine with an operating ratio of 80 per cent loses half its net when prices decline 10 per cent, assuming constant costs; with a ratio of 70 per cent, the loss is but one third. The statement that the company with a lower operating ratio suffers less from price declines is the equivalent of the rule that the high-cost producer suffers most from lowering prices.

The lack of uniformity in stating costs per unit of output makes many comparisons valueless. Because depletion charges are unstandardized and represent the writing down of mine valuations, which are themselves of an arbitrary nature, they should be eliminated from cost. Income taxes, interest, and, possibly, depreciation, should be omitted from costs. Although there are possible objections, it would

<sup>25</sup> Standard Statistics Company, annual report card for 1934.

seem best to credit operating costs with the value of minor metals recovered, such as the silver in some copper mines, and lead and zinc in some gold mines.<sup>26</sup> Adopting such a uniform basis, the analyst can often work out per-unit costs from the statements.

**A waning mine.** The figures for the Goldfield Consolidated Mines Company illustrate the conditions of a mine undergoing the rapid loss of profitable ore. The table on page 467 shows how the development work was pushed for a considerable time after the decline began. The investor, however, was warned first in 1911, when, although the net earnings per share were actually greater than for the preceding year, the per-ton figure showed a serious reduction in the value of the recovered product. The net earnings per share in 1911 were \$2.07 as compared with \$2.01 in the preceding year, and dividends were paid at the same rate as formerly. The per-ton recovery, however, dropped back from \$38.50 to \$30.74, a decline of 20 per cent. The condition is somewhat obscured by the reduction that took place in per-ton costs. The operating costs as a whole were actually somewhat lower than for the preceding year's smaller tonnage. The initial reaction continued in 1912, when the per-ton recovery slumped to \$18.40.

The figures given cover practically the whole productive life of the Goldfield Company, that is, from the completion of the 100-stamp mill with a capacity of 650 tons per day on December 26, 1908, through the year 1917. In 1914 the company acquired another smaller property, the Aurora Consolidated Mines Company, which, however, was unsuccessful.

The surrender to conditions is marked by the action reported in the following statement:

It was found, early in 1919, that it was not advisable to continue the operation of the property on company account, mainly for the reasons that the production of ore, not only from the company operations, but also from lessees, was continually declining, with consequent prohibitive increase in the operating cost; and the value of the ore produced was gradually decreasing, resulting in material loss each month.

<sup>26</sup> The weakness of this treatment is seen whenever the by-product becomes of substantial value. Thus, in recent years, International Nickel Company of Canada, Ltd., owner of the world's largest nickel-copper deposit, has produced from a pound and one-half to two pounds of copper for each pound of nickel. In spite of the higher price of nickel, copper is more truly a joint product than a by-product.

GOLDFIELD CONSOLIDATED MINES COMPANY

STATISTICAL SURVEY OF OPERATIONS

For the Years 1909-1917

(\$000's omitted)

Year Ending	Devel opment Work in feet	Tons treated and shipped	Average value per ton received	Total costs	Average per ton total costs	Net operating realization	Average per ton net operating realization	Earned per share	Dividends Paid		
Oct 31 1909	40,668	194,479	\$ 6,752	\$34.72	\$ 8.98	\$ 5,027	\$25.84	\$ 1.31	\$ 3,201,239		
" 1910	43,236	266,867	10.274	38.50	2.926	10.97	7.348	2.01	7,118,271		
" 1911	46,739	330,549	19,163	30.74	2.636	7.97	7.527	2.07	7,118,296		
Dec 31, 1912 (14 mo)	45,116	415,786	7.652	18.40	2.766	6.65	4.886	11.75	1.33	5,694,637	
" 1913	38,696	349,465	4,943	14.14	2.211	6.32	2.732	7.82	0.42	2,491,403	
" 1914	30,028	338,192	3,926	11.61	2.091	6.19	1.835	5.42	0.29	1,067,744	
" 1915	31,603	330,054	3,516	9.01	1.957	5.02	1.558	3.99	0.23	1,601,617	
" 1916	29,024	328,680	2,211	6.53	1.755	5.18	4.56	1.34	Nil	None	
" 1917	16,477	250,550	1,763	7.04	1.745	6.01	2.56	1.03	Nil	None	
Totals or Averages	2,871,622	\$51,200	\$17.81	\$19.575	\$ 6.81	\$31,625	\$10.97			\$28,293,207	

Accordingly, on January 31, 1919, all mining operations were discontinued. A lease was granted shortly to the Goldfield Development Company, but this was surrendered at the end of the following year, as "it was apparent that the property had been developed as far as resources would permit."

**Dividends from capital.** The general balance sheet of the Goldfield Consolidated Mines Company on December 31, 1913, was somewhat unusual. Reference to the Mine Properties shows that account written down to \$9,297.161. The footnote states that \$22,205,485 had been deducted as representing the exhaustion of ore deposits to date. Unfortunately for the correctness of the balance sheet, this account was largely restored in 1915, and the account at the foot of the asset column, Distributed as Dividends, was removed by charging it against the surplus which resulted from the restoration.

#### THE GOLDFIELD CONSOLIDATED MINES COMPANY

##### GENERAL BALANCE SHEET

December 31 1913

Assets		Liabilities	•
Mine Properties*	\$ 9,297,161	Capital Stock	\$35,591,480
Organization Expenses	4 079,970		
Buildings, Equipment, etc	121 074	Reserves	
Securities Owned	836 026	Income Tax	12 499
Unexpired Insurance	351	Bullion Tax	7,269
Accounts Receivable	112,506	Accounts Payable	88,019
Supplies	37 622	Net Amount Realized	
Cash	383,192	from Operation †	5,499,104
Distributed as Dividends	26 330,471		\$41,198,371
	\$41 198,371		\$41,198,371

\* Mine properties \$31,502,646 less amount computed as representing exhaustion of ore deposits to date \$22,205,485 Balance, \$9,297,161

† Net amount realized from operations \$27,704,589, less amount computed as representing exhaustion of ore deposits to date, \$22,205,485 Balance, \$5,499,104

The Distributed as Dividends account represented in effect a deficit account created by the return of a part of the stockholders' capital through dividends. It might properly have been labeled with the title "Capital Returned through Dividends," offsetting the Capital Stock as the Reserve for Depletion offsets the Property account. Although such an account title is unusual, it nevertheless represents the facts better than "Deficit" does, which ordinarily is associated with unprofitable operations—which is not necessarily the case with a mine. Where the operation of returning the capital is completed success-

fully, this special account would finally equal and offset the Capital Stock liability opposite, at least by the time the property was exhausted.

The profit and loss surplus designated in the balance sheet as "Net Amount Realized from Operation" is unreal, as is demonstrated by the inability of the company to make a sufficient amount during the remainder of its existence to write off the balance of the Mine Properties.

Whenever it was the intention of the management to have made a portion of the dividends "payable from earnings," those dividends might properly have been deducted from this account, Net Amount Realized from Operations. In view of the fact that the total of all dividends was less than the capitalization, the dividends must be regarded as wholly a return of capital—at least from the standpoint of the company's accounts. For the investor, the dividends would, of course, constitute income, instead of return of capital, if they had exceeded the cost of the stock to him.

**Investors' dependence on management.** There are certain methods that may be employed to increase temporarily the showing of profits, to the ultimate detriment of the mine, which must be kept in mind in the study of the earnings statement. J. C. Pickering, a mining engineer, mentions the following:<sup>27</sup>

1. Selective mining. A mine might be skimmed by extracting only the richest and most accessible deposits. This would make a good temporary showing, but might prevent the profitable treatment of the remaining ore reserves.
2. Reduced development
3. Employment of unsuitable mining methods, such as failure properly to timber the shafts.
4. Inadequate maintenance of equipment.

Some of the above might be discovered by a close analysis of the financial reports. It is clear, however, that against an unscrupulous management, the outsider is practically helpless. A designing management has been known to manipulate earnings up and down for the effect on the market price of the shares. It is highly important that those who have charge of the venture be worthy of the investor's confidence.

<sup>27</sup> J. C. Pickering, *Engineering Analysis of a Mining Share*, pp. 49 and 50.

Under the difficult conditions of 1921, some of the largest copper companies that were not forced to close down practiced selective mining, which, however, was *plainly published*. The following comparison of the production of the Kennecott properties in 1920 and 1921 plainly sets forth the neglect of the poorer property. Had the details not been set forth, the higher percentage of assay, 5.20 per cent in 1921, as compared with 4.18 per cent in 1920, should have been suggestive.'

#### KENNECOTT COPPER COMPANY

	1921		1920	
	<i>Dry Tons</i>	<i>Assay*</i>	<i>Dry Tons</i>	<i>Assay*</i>
At Kennecott . . . . .	229,809	7 66	223,009	9 04
At Latouche . . . . .	168,058	1 83	451,463	1 77
Total . . . . .	<u>397,867</u>	<u>5.20</u>	<u>674,472</u>	<u>4.175</u>

\* Per cent of copper.

**Special considerations in analysis.** It will be seen that the financial report can be useful in valuing the mining securities, especially when supplemented by data on probable ore reserves and factors likely to affect future prices of products and costs. Considerable reliance upon the integrity and ability of the management is required. The records of both managers and technicians should be sought, for past associations, although not proof in this connection, usually constitute strong evidence. Something of their policies and attitude in the matter of dividend disbursements and development work may also be learned.

The person studying mining ventures should always keep in mind the distinctive nature of the enterprise—exhaustible assets and, frequently, high risk. The peculiarities of mining have made luck seem important, and the losses of the unskilled have undoubtedly exceeded the gains they have made, because consistent profits can be obtained only through skillful analysis. There must also be a spread of investments to insure any safety. The need for diversification is one reason why the very small investor is not likely to invest in this field to advantage. The chief reason is, however, that it would cost the small investor the same amount of money and effort that it would a larger investor to get the same safety. It is improbable that the extra return earned on a small sum will justify the cost of a satisfactory study.

## CHAPTER XVII

### Bank Statements

**Commercial banks.** Banks are one of the three major classes of financial corporations chosen for study here. Banking institutions perform various functions. Of chief interest are our commercial banks, which receive deposits and make loans. It is this type of bank and the Federal Reserve banks that will be considered in this chapter. Investment bankers do not engage in what is commonly thought of as banking; that is, accepting deposits and making loans. Instead, they are security merchants and purchase corporate and other securities which are resold to investors.

The commercial bank receives funds that individuals and concerns wish to be able to use as cash on demand. Such deposits, subject to checking, constitute the most important source of the funds held by the commercial banks. Time deposits, upon which interest is usually paid, are also large. Savings banks specialize in the latter type of deposit and are largely mutual institutions. Savings and loan associations are close kin to the mutual savings banks but have special forms of savings arrangements. They usually specialize in lending these savings as installment residential mortgage loans.<sup>1</sup>

**Bank reports.** National banks are required to report their condition to the Comptroller of the Currency at various times during the year. The call for this report is made on dates chosen by the Comptroller, and the banks are informed as to the date a few days after that date has passed. The law requires that the bank publish the substance of this report in at least one newspaper, and the Comptroller publishes various compilations from the detailed reports submitted to him. In addition to the reports published by the individual bank as required by law, *Moody's Manual of Investments* is a con-

<sup>1</sup> One interested in reading the statements of these associations might study *Financial Facts about Savings and Loan Associations*, published by the United States Savings and Loan League, Chicago.

venient source of statement material—usually in a condensed form—for particular institutions.

State banks and trust companies operate under state instead of Federal law, and accordingly are required to report to the states' supervising officials. Requirements vary in the different states. In New York state, reports of a very detailed nature are called for four times during the year. The Comptroller of the Currency and the state officials co-operate in calling for statements at the end of June and of December each year, so that combined statistics for both national and state institutions may be had as of that date. Inasmuch as all national banks and most of the large state banks are members of the Federal Reserve system, the figures published in the Annual Reports of the Board of Governors provide information about the bulk of both the state and the national systems combined, as well as for the Federal Reserve banks. Individual Federal Reserve banks publish statement data for the member banks in their territory. Most useful and inclusive data for both national and state banks are reported in the *Annual Reports of the Federal Deposit Insurance Corporation*, which do not, however, extend back for so many years as the national bank figures used here for illustration.

**Liability classification.** Because the investment of the funds of a bank is determined by the nature of the liabilities, they will be considered first; then the assets in their relation to the liabilities.

The main classes of liability items are:

1. The capital stock, surplus, and undivided profits representing the investment of the stockholder, the first being permanent investment, the last subject to possible reduction through dividend payments or unusual losses, and the second having characteristics partly like capital and partly like the undivided profits, because it may represent either capital investment or retained earnings.
2. Obligations, chiefly deposits, which must be met on demand
3. Obligations, largely deposits, which the bank need not meet for more than 30 days.
4. Borrowings of the bank.
5. Liability for letters of credit and acceptances, usually counterbalanced by an equal asset of claims against customers.

The combined statements of all national banks, given above, serve to illustrate both the various kinds of items that appear in the bal-

## BANK STATEMENTS

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## ASSETS AND LIABILITIES OF NATIONAL BANKS

(Millions of Dollars)

	Assets	1940†	1950‡
Loans and Discounts, Including Overdrafts . . . . .	\$ 9,179	\$29,277	
U. S. Government Securities, Direct Obligations . . . . .	7,220	35,688	
Obligations Guaranteed by U. S. Government . . . . .	1,891	4	
Obligations of States and Political Subdivisions . . . . .	1,928	4,687	
Other Bonds, Notes, and Debentures . . . . .	1,648	2,468	
Corporate Stocks, Including Stock of Federal Reserve Banks . . . . .	217	176	
Total Loans and Securities . . . . .	<u>\$22,085</u>	<u>\$72,300</u>	
Cash, Balances with Other Banks, and Cash Items in Process of Collection . . . . .	13,877	23,813	
Bank Premises, Furniture, and Fixtures . . . . .	597	637	
Real Estate and Other Than Bank Premises . . . . .	120	14	
Other Assets Indirectly Representing Real Estate . . . . .	65	57	
Customers' Liability on Acceptances Outstanding . . . . .	42	116	
Interest Accrued but not Collected . . . . .	59	173	
Other Assets . . . . .	40	129	
Total . . . . .	<u><u>\$36,885</u></u>	<u><u>\$97,240</u></u>	
	Liabilities		
Demand Deposits (Individuals, Partnerships, Corporations) . . . . .	\$15,977	\$52,053	
Time Deposits (Individuals, Partnerships, Corporations) . . . . .	7,876	19,011	
Deposits of U. S. Government and Postal Savings . . . . .	565	1,911	
Deposits of State and Political Subdivisions . . . . .	2,271	5,707	
Deposits of Banks . . . . .	6,084	9,135	
Other Deposits (Certified and Cashiers' Checks, etc.) . . . . .	302	1,714	
Total Deposits* . . . . .	<u><u>\$33,074</u></u>	<u><u>\$89,530</u></u>	
Bills Payable, Rediscounts, and Other Liabilities for Borrowed Money . . . . .	3	77	
Mortgages or Other Liens on Bank Premises and Other Real Estate . . . . .	0.1*	0.4	
Acceptances Outstanding . . . . .	51	135	
Income Collected but not yet Earned . . . . .	41	178	
Expenses Accrued and Unpaid . . . . .	50	303	
Other Liabilities . . . . .	189	689	
Total Liabilities . . . . .	<u><u>\$33,409</u></u>	<u><u>\$90,911</u></u>	
	Capital Accounts		
Capital Stock . . . . .	1,535	2,002	
Surplus . . . . .	1,250	2,925	
Undivided Profits . . . . .	468	1,124	
Reserves . . . . .	224	278	
Total Capital Accounts . . . . .	<u><u>\$ 3,476</u></u>	<u><u>\$ 6,329</u></u>	
Total Liabilities and Capital Accounts . . . . .	<u><u>\$36,885</u></u>	<u><u>\$97,240</u></u>	
Number of Banks . . . . .	<u><u>5,170</u></u>	<u><u>4,965</u></u>	

† As of June 29.

‡ As of December 30.

\* In 1950: demand deposits—69,333, time deposits—20,197.

Source: Annual Report of the Comptroller of the Currency.

ance sheet and some of the proportions that are likely to prevail.

**Stockholders' interest.** The net worth, or capital, accounts are ordinarily found under four headings: Capital Stock, Surplus, Undivided Profits, and Reserves. Profits appear first in the Undivided Profits account. When it is thought wise to set aside some portion in such a manner that the stockholders will no longer regard them as distributable in the form of dividends, they are transferred to Surplus, which is regarded as permanent capital. Surplus is used, however, to meet unusual losses, and the directors may transfer it back to Undivided Profits, except to the extent that surplus accumulation is required by law. The figures for all national banks show surplus has grown to be more important than stock as a source of funds, and for some individual banks it is much more so. Because in the case of national banks and of many state institutions, loans to any one borrower are limited to a percentage of capital stock and surplus, the extent to which the bank can accommodate the individual borrower is gradually increased through the growth of surplus.

Reserves have become more common in recent years to meet various contingencies and so make it unnecessary to charge special losses against the Undivided Profits. In the national bank figures given above the Reserves are evidently such contingency, or surplus, reserves and grouped with the net worth items. In published balance sheets of individual banks, these reserves may be mingled in a single figure with certain accrued liabilities, such as reserve for taxes or for interest, so that the reader can make no separation. The mixture is bad reporting. In such cases, the reader ordinarily excludes the item from calculations of book value of the stock but notes its presence and estimates, where possible, the amount it is likely to add to that value. Valuation reserves that provide for loan and investment losses are ordinarily subtracted from the asset and their amount not ordinarily disclosed in the published balance sheet.<sup>2</sup> Sometimes

<sup>2</sup> The Chicago National Bank, recognizing the importance of its allowances for possible loan losses, reported to its shareholders a Loan Valuation Reserve of \$1,719,980 at the end of 1951, as compared with a net figure of \$31,505,684 shown in the balance sheet for Loans and Discounts. The Chase National Bank of New York reported (1946) that, in addition to the \$15,624,000 Reserve for Contingencies carried in its Statement of Condition, additional unallocated reserves had been deducted in arriving at asset figures, together with other reserves resulting from market value of assets exceeding book value that were in excess of \$20 million. Such reserves were exclusive of market appreciation in the bond account.

capital gains on the sale of investments are added to the valuation reserves rather than to Undivided Profits, thereby concealing such profits.

The net worth, or excess of assets over liabilities, serves as a margin of safety to depositors. Some states, feeling the need for keeping this margin of protection up to a certain point, have had legislation requiring that a bank should not accept deposits in excess of a certain number of times its capital stock and surplus, such as ten.<sup>3</sup> If deposits are ten times the capital and surplus, and if the loans and investments are approximately equal to the deposits, then a loss of over 10 per cent of these earning assets would wipe out the margin of protection to the depositors. This relation of deposits to net worth is the rough equivalent of the debt-to-net-worth ratio so often used in other fields of balance sheet analysis. The ignored liabilities are the bills payable representing bank borrowing, and miscellaneous liabilities, which are usually of minor importance. If these should be of first-rate importance, a fairer basis of interbank comparisons would include all liabilities rather than deposits alone. The ordinary importance of the lesser liabilities can be seen more clearly from the condensed statement of the national bank figures given in percentage form on the next page.

The ratio of deposits to net worth for all national banks was 9.5 to one at the end of 1940, up to 18.5 in 1945 at the end of World War II, and down again to 14.2 in 1950. During the 1920's this ratio ran about 6. Because the need for a protecting net worth lies in the possibility of asset shrinkage, the higher proportion of cash and short-term Government obligations in recent years has reduced the need by so much. This principle applies both to the banking system and the individual bank. After the bank crisis in the early 1930's, lending opportunities shrank; but bank deposits expanded as the Government pursued a policy of deficit-financing. In the war years between

<sup>3</sup> For historical material and discussion, see Holland Robinson, "The Capital-Deposit Ratio in Bank Supervision," *Journal of Political Economy*, February, 1941, pp. 41-58. For a more recent analysis prepared for the Illinois Bankers Association, see G. A. Freeman, Jr., *The Problem of Adequate Bank Capital*. (The author, First National Bank, Chicago.)

Laws requiring a minimum capital stock or the accumulation of a certain surplus in relation to the capital stock fail to meet the needs for establishing a safety margin in relation to deposits. The former requirement might prevent uneconomically small banks were not the minimum stock under both state and Federal laws so low as to be doubtful value.

1940 and 1945, bank assets and deposits more than doubled as the deficits accelerated. In these years the growth in bank net worth was far outstripped by deposit expansion. In the five postwar years 1946-1950, the total volume of bank credit stabilized, but a substantial amount of Governments was disposed of as loan demand increased.

**CONDENSED PERCENTAGE STATEMENT OF CONDITION  
FOR ALL NATIONAL BANKS**

<i>Assets</i>	1950*	1945*	1940†
Cash and Due from Banks	24.5%	22.3%	37.6%
U.S. Government Obligations	36.7	56.9	24.7
Other Securities	7.5	4.5	10.3
Loans and Discounts	30.1	15.4	24.9
Real Estate	0.7	0.6	2.1
Miscellaneous Assets	0.5	0.3	0.4
Total	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>
 <i>Liabilities</i>			
Deposits			
Demand	71.3%	76.1%	57.0%
Time	20.8	18.1	22.7
Bills Payable and Rediscounts			
Other Liabilities	1.4	0.7	0.9
Capital Stock	2.1	1.8	4.2
Surplus Undivided Profits and Reserves	4.4	3.3	5.2
Total	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>
Total Assets (millions of dollars)	97,240	90,536	36,885

\* As of December 31.

† As of June 30.

Because the need for an ownership equity is to protect depositors against asset shrinkage, some prefer to compare it with the "risk assets" rather than deposits. These are defined as assets other than cash and Governments. This measure is an improvement over the deposits-to-net-worth ratio although it is still a crude one because it ignores differences in the quality of the risk assets and the risk of loss on Government obligations where a bank may be obliged to sell before maturity at less than cost. This ratio showed no increase in risk during the 1930's and the War period as might appear from the less revealing deposits-to-net-worth ratio. It was substantially the same figure in 1945 as in 1940 but rose from 4.1 to 6.0 between 1945 and 1950 while the deposits-to-net-worth ratio was falling. Bank management probably should limit its exposure to asset loss.

to that part of its ownership equity represented by surplus, undivided profits, and reserves.<sup>4</sup>

Occasionally, preferred stock is found in the net worth section although its use is exceptional in normal times. When, after the banking moratorium in 1933, net worth was found to be impaired for many banks, the Federal government made advances by purchasing preferred stock through the Reconstruction Finance Corporation. Most of these amounts have been repaid.<sup>5</sup>

**Demand and time liabilities.** The liabilities are almost entirely deposits. In most published statements except where the form of publication is prescribed by law, there is but a single heading, "Deposits," although a separation of demand and time deposits is desirable.

In the detailed reports however there will be listed the following kinds of deposits, which are the chief bank liabilities and the nature of which should shape the character of the bank's assets.

#### Demand Deposits

- Individuals, partnerships and corporations
- United States Government
- States and political subdivisions
- Banks in the United States
- Banks in foreign countries
- Certified and cashiers' checks, etc

<sup>4</sup> The twin problems of investment risk and liquidity for banks can be studied in R. E. Bidger and H. G. Guthmann *Investment Principles and Practices* (New York: Prentice-Hall Inc., 4th ed. 1951), pp. 770-780, and more fully in Roland I. Robinson *The Management of Bank Funds* (New York: McGraw-Hill Book Co. Inc., 1951). In 1945 the Federal Deposit Insurance Corporation urged against a rigid capital (net worth) to risk asset requirement on the further grounds that cash and Governments (nonrisk assets) could readily be converted into risk assets. *Annual Report, 1947*, pp. 8-10. Its 1950 annual report showed the average per cent of capital to risk assets (the reciprocal of the ratio as stated in the text above) for all insured banks had declined from 20.3 per cent in 1947 to 17.1 per cent in 1950. The ratio varied widely among various states from over 20 per cent in Delaware, Pennsylvania, and Arkansas to 12.3 per cent in California and 10.3 per cent in Arizona.

<sup>5</sup> The Reconstruction Finance Corporation during the depression years of the early 1930's invested more than \$1 billion in the capital of about 6,000 banks. By the end of 1950 this had been reduced to \$93 million in 423 banks. *Annual Report of the Federal Deposit Insurance Corporation, 1950*, p. 17. In reading the balance sheets of banks showing such preferred stock it is essential to remember that its par or stated value may be nominal. To calculate book equity for common stock, the redemption value including any accumulated dividends, must be deducted from the total net worth.

**Time Deposits (payable after 30 days or more notice):**

Individuals, partnerships, and corporations

Postal Savings

States and political subdivisions

Banks in United States

Banks in foreign countries

Demand deposits may on occasion also include certified and officers' checks, cash letters of credit, travelers' checks, and dividends payable. Time deposits may include Christmas savings accounts and deposits accumulated for the payment of personal loans

Of these items classed as "Deposits" in the condensed balance sheet, there are three which ordinarily will be the most important. They are:

1. Demand deposits, subject to check, from ordinary customers. (Such accounts are called "Individual" by the banker, whether they are with individual persons or with corporations, as distinguished from accounts with other banks )
- 2 Time deposits, which are usually interest-bearing and not subject to check, from ordinary customers.
3. Amounts due to banks and bankers.

In an active city bank, the demand deposits of its customers will be the most important source of loanable funds In a village bank or a city bank that caters to savings accounts, the time deposits might be larger The deposits are important to the banker as the source of most of his loanable funds, and their growth is studied as one of the criteria of a bank's success

Amounts due to banks and bankers are likely to be large only in the case of metropolitan banks that hold deposits from banks in other parts of the country Such deposits are used to pay claims to other banks when customers' checks are deposited in other communities. For certain state banks, part of these deposits may count as a portion of their *legal* reserve against their own deposits as a matter of state law. Deposits are carried by member banks in the same way and for the same purpose with the Federal Reserve banks. For national banks and other members of the Federal Reserve system, only deposits carried with the Federal Reserve banks count toward the *legal* reserve requirements.

When a person with a deposit to make does not wish to open a bank account, he may be given a certificate of deposit payable on demand. Such a certificate might be purchased for the purpose of sending a remittance through the mails. Again, a time certificate may be used as an interest-bearing deposit payable after some stipulated interval, such as six months.

When the bank certifies a customer's check, it charges his account, and the check becomes a liability of the bank until it is paid. Cashier's checks are checks issued by the bank on itself, sometimes in payment of its own bills, sometimes to customers who prefer this instrument to the certified check in making a remittance by mail.

**Accrued liabilities.** The accruals are of minor importance and, like those of other businesses, include accrued taxes and other expenses. Accrued interest liability is owed chiefly to depositors, who are credited semiannually for the most part. The liability Unearned Discounts represents deferred income. Thus, if a bank has discounted a \$2,000 60-day note at 6 per cent on June 15, only one fourth of the discount of \$20 would be earned on June 30. On the latter date, the bank's statement should include \$15 as its liability to customers for unearned discounts.<sup>6</sup>

**Bank borrowings.** Banks may obtain additional funds by borrowing from other commercial banks or, if members of the Federal Reserve system, from their Federal Reserve bank. This may be done either on their own note or by rediscounting some of the notes from their own portfolio. Where the bank's own note is employed, the liability "Bills Payable" will appear, and the borrowing bank will usually pledge some of its assets as collateral.

Although the liability of the bank is only contingent when the bank rediscounts the notes of its customers, the amount is always shown among the other liabilities, as:

#### Notes Rediscounted at Federal Reserve Bank

<sup>6</sup> Sometimes certain deposits, such as those by the Federal government or local municipalities, may be secured by a pledge of securities. Such pledged assets will be indicated in footnotes. Until 1935, one secured liability was the notes issued by the National banks and used by the public as currency. Certain "Circulation privilege" U. S. bonds and a redemption fund were deposited as security with the U. S. Treasury. The profit lay in any excess of net yield from the bonds over the costs and taxes connected with note issuance, and the loss of income from funds tied up in the redemption fund. Bank notes are now issued only by the Federal Reserve banks.

Consequently, the rediscouned notes still appear under the loans and discounts, and the net amount in the bank's portfolio would be obtained by finding the difference. Similarly, when acceptances are sold with an indorsement, so that a contingent liability exists, this responsibility appears among the liabilities offsetting the sold acceptances, which continue as an asset. Upon maturity, the contingent asset and contingent liability both disappear.

A third form of borrowing is the "sale with agreement to repurchase." In this case, the bank needing funds makes itself liable to repurchase the securities it is selling in order to realize cash, and the liability for "Agreements to Repurchase Securities Sold" is placed next to "Bills Payable and Rediscounts." The actual securities continue in the balance sheet as an asset but, like the rediscouned notes, are offset by a counterbalancing liability.

**When banks borrow.** Ordinarily, banks avoid borrowing, except when located in small communities where the available funds are insufficient to meet the needs of business. Thus, in agricultural communities where extra funds are needed at the crop-moving season, some banks borrow with seasonal regularity. In such a case, the bank with limited capital and deposits is able to serve the community as it should only by borrowing from the larger city banks. It may, however, share some of its loans with these latter banks.

The larger banks and city banks in general avoid borrowing except when acute financial conditions make it imperative, and then they bend every effort toward repayment. This general policy has led some banks to emphasize their freedom from borrowing by entering the "Rediscounts and Bills Payable" title among their liabilities with a prominent "None" after it. However, banks and the business community should be careful not to cast reflection upon bank borrowing that will result in undue avoidance by banks of the use of this resource. A bank which fails to use its reserve of borrowing power in a crisis when its sound customers need the help is failing to render the service it should. Although no rule exists, it is generally felt that borrowing of banks should be limited to an amount equal to their capital stock and surplus.

**Letters of credit.** Travelers' letters of credit and travelers' checks are sold for cash, and the bank becomes liable for the sum. Such a letter is similar in effect to a certificate of deposit and is an ordinary

liability. The great bulk of letters of credit, however, are commercial letters of credit, which are merely authorizations permitting the creditors of the bank's customers to draw drafts on the bank under certain conditions. Thus, an exporter of coffee in Brazil draws a 90-day draft on the bank of a New York importer. Inasmuch as this has been authorized under a commercial letter of credit, the Brazilian is assured of the acceptance and the final payment of his draft. The New York bank accepts the draft, thereby creating what is known as a "banker's acceptance." It is understood that shortly before the draft comes due, the importer will provide the funds for the payment. The bank, if it has not misjudged the ability of the importer, has earned a commission by letting its customer make use of its credit.

The contingent liability for commercial letters of credit issued but *not used or drawn against*, or for a similar credit opened for the customer with a foreign bank but *not used*, is omitted from the face of the statement. The item is entered only after the draft has been *actually accepted* by the bank. Travelers' letters when issued not for cash but under a guaranty or deposit of security are similarly treated; that is, entered only when drawn against.

After the acceptance of a draft, the assumption of the liability for the customer is shown as Acceptances. The bank has not advanced any funds, and it expects to be placed in funds by the customer before it is called upon to meet the claim. The liability is counterbalanced by the equal liability of the customer to provide funds for the payment of the acceptances at maturity, the latter being shown on the asset side. If the liability item exceeds the asset item, as is sometimes the case, the excess indicates that the customer has anticipated payment and liquidated his liability. Sometimes the accepting bank purchases its own acceptances in advance of maturity. Such a policy is illustrated in the statement of the National City Bank of New York, which showed the following net liability on December 31, 1951:

Liability on Acceptances and Bills	\$31,574,858
(Own Acceptances in Portfolio Deducted--\$12,992,281)	

**Accountability in trusteeship.** Although the responsibility of the trustee is an accountability rather than a liability, it is appropriate to mention the matter at this point before we pass to the discussion

of the assets. A number of state and national banks exercise trust company functions, but it is not customary for them to show the amount of their responsibility in their statements, although it would be of interest to know the relation of that figure to the bank's net worth. The Comptroller of Currency reported that national banks with fiduciary powers held investments amounting to \$18.4 billion in living and court individual trusts, whose total assets were \$34.6 billion on December 31, 1950.<sup>7</sup> Assets left with an institution to be administered as a trust fund are not the property of that institution; nor does the institution render any of its general assets liable to seizure by the beneficiaries of the trust, so long as the terms of the trust are faithfully carried out, and the general laws governing trustees are kept.

Because the bank has a financial responsibility for the proper administration of trust assets, their total should appear in connection with the balance sheet. This principle explains the value of stating the total amount held in trust, as illustrated by the statement (December 31, 1951) of the National Trust Company, Ltd., a Canadian company that does no commercial banking. The liability side of the balance sheet shows little save net worth, as follows:

Capital Stock (par \$10)	\$3 000 000
Reserve Fund	3 000,000
Profit and Loss	594 310
Dividends Payable	75 000
Reserve for Income Taxes	186 165
, Total	<u>\$6 855 475</u>

"But further responsibility for trust funds is stated as:

Trust Deposits	\$ 29 653,420
Estate Trusts and Agency Accounts	373,851,278

These funds would be balanced by investments and cash held for the beneficiaries of the several trusts.

**Order of assets.** Report forms used in state and Federal supervision call for the assets in a particular order and detail, but it is becoming customary in statements published in the press to condense the items and arrange them in the order of their liquidity. Before

analyzing the relative merits of the various forms of investment and the proper proportion for the various assets, a brief explanation of the various items in the order of their liquidity will be made.

**Cash and cash items.** The cash may be subdivided according to whether it is in some of the various forms of coin or paper currency. In the class of items that serve the same purpose as cash are the balances carried with the Federal Reserve Bank and with other banks and bankers. There are also items which are in the course of collection, such as "checks on other banks," "exchanges for the clearing house," and the like. Although it has been stated that such of these items as are not cash serve as cash, there are certain distinctions that will be drawn later in the discussion of reserves.

**United States obligations.** Because of their high-grade character and ready marketability, United States Government securities might rank next as a cash resource. Actually, long-term bonds are subject to considerable fluctuation as a result of changes in market interest rates. Thus, if net yield rates change from 3 to 4 per cent, a 20-year 3 per cent Government bond would drop from 100 to 86.32, or 13.7 per cent. Consequently, a bank seeking market price stability would purchase short maturities, say of three years or under, which fluctuate least in price when interest rates change. For this purpose, Treasury bills and certificates, which are limited to one year as their maximum duration, are especially desirable. Treasury notes and bonds are also satisfactory when they approach their maturity, or have been called for payment at some near date, or are likely to be called because of a high coupon rate and a favorable market. The desirability of short maturities is particularly evident in times of subnormal interest rates. At such times, the risk of rising rates and declining bond prices leads to a scramble for short maturities that pushes their yield very low. This low return is regarded as preferable to the higher return on longer maturities because the latter is coupled with the risk of market decline. An adequate bank balance sheet would segregate short-term issues from long-term bonds.

**Loans and discounts.** "Loans and Discounts" is the title given to the loans that the bank's make and does not include securities, such as bonds. They are ordinarily for a relatively short period, usually averaging less than three months. The most important items in ordinary times are loans made to the bank's own customers: commercial

**BANK STATEMENTS**

and industrial, in large urban centers, agricultural, in farm country. These are typically unsecured promissory notes signed only by the borrower (single-name paper) and based on his financial standing. Such paper may on occasion be two-name, where the borrower discounts notes or drafts from his customers or has obtained an accommodation indorsement. Some loans are secured by evidences of title to merchandise, such as warehouse receipts. Collateral loans, which are secured by stocks and bonds, may represent business or personal needs but are most likely to be to brokers for financing security transactions. Loans on real estate increased in relative importance as the volume of commercial and industrial lending shrank during the 1930's. Unlike most other bank loans these are typically of long maturity. Other types of loan such as bank acceptances, commercial paper bought in the open market, and loans to banks are ordinarily small.

The character of loans varies not only from bank to bank but also from time to time. Consequently the accompanying figures of loans for all national banks given here for illustration give a picture of relative importance that is subject to considerable change.

**LOANS AND DISCOUNTS OF ALL NATIONAL BANKS**

As of December 30 1950

(Millions of Dollars)

Commercial and Industrial Loans (Including Open Market Paper)	\$13 402
<b>Loans to Farmers</b>	
Guaranteed by the Commodity Credit Corp	197
Other Loans	1 229
<b>Loans to Brokers and Dealers in Securities</b>	
Other Loans for Carrying Stocks, Bonds and Other Securities	725
	524
<b>Real Estate Loans</b>	
Secured by Farm Land and Improvements	371
Secured by Residential Properties (Other than Farms)	5 461
Secured by Other Properties	1 146
Other Loans to Individuals (Consumer Loans)	5 669
Loans to Banks	40
All Other Loans (Including Overdrafts)	902
	<hr/>
Less Valuation Reserves	388
Total Loans and Discounts	<u>\$29 278</u>

Source *Annual Report of the Comptroller of Currency* 1950 p 127

The importance of the ordinary commercial and industrial loan is apparent. The growth of real estate and personal consumer loans is a relatively recent development. Consumer loans were formerly felt to be the province of the automobile finance and personal loan company. Real estate loans were deemed too unliquid to be suitable for the commercial bank. Until 1927, national banks were not permitted to make such loans. Under the present law, loans upon improved property are permitted up to 50 per cent of the value for not over five years, or up to 60 per cent for ten years if installment repayments are made to retire 40 per cent or more of the loan by maturity. Larger loans for longer periods are permitted if covered by Federal Housing Administration or Veterans' Administration mortgage insurance. Total real estate loans are limited to not more than the bank's capital and surplus, or 60 per cent of its time deposits, whichever is greater.

The commercial bank will invest its funds, as far as possible, in the paper of its own customers—first, because it normally yields the higher rate of return, and second, because the banker owes it to the community from which he derives his deposits and capital to aid in its growth insofar as sound banking principles permit. The limitations upon this policy are discussed below in connection with the subject of reserves and "secondary" reserves.

**Investment in securities.** It is clear that these loans and discounts, save for the real estate loans, should, if properly made, be of a comparatively liquid nature, and would through their maturity provide funds in a relatively short time in case of need. Investments, which ordinarily are understood to consist entirely of bonds, are also frequently spoken of as liquid, but liquid in a different sense. Cash may be realized on them, not because of their short maturity, but through their salability. A sale may, however, involve loss. This disadvantage has been keenly felt by some banks that, in dull periods, have invested in bonds only to find in an ensuing period of business activity that they were obliged either to take a loss on these investments or to forego possibilities of taking profitable commercial loans. For this reason, it is more accurate to say that these holdings are marketable, rather than liquid, save for that portion of the holdings that because of short maturity and high quality possesses price stability.

The more conservative practice is to carry bonds at cost or market, whichever is lower. Since 1938, however, member banks of the Federal Reserve system have been permitted to carry bonds of investment quality at cost even though market is lower.<sup>8</sup> The need for liquidity suggests the desirability for a "cost or market, whichever is lower" rule of valuation. The situation differs from the more permanent investment position of the savings bank and the life insurance company, which disregard market fluctuations so long as the bond is good.<sup>9</sup> The regular amortization of premium or discount (i.e., writing off a fraction of the same each year) is a regular part of the accounting for these latter institutions.<sup>10</sup>

The high proportion of United States obligations shown in the following table of national bank investments began during the first World War, when the banks purchased large blocks of Liberty Bonds, but took on new impetus with the deficit-financing of the 1930's. The issues with short maturity are especially suitable.

The remainder of the list is diversified but relatively of much less importance. The rise of corporate income tax rates has made tax-exempt municipal bonds of more interest than formerly. Both civil and corporate bond holdings are likely to be of high quality after the unhappy experiences of the banks with inferior bonds in the early 1930's. The stock of Federal Reserve banks is a compulsory investment for national and other member banks. Other stock investments are forbidden save as they represent collateral taken over on secured loans in default.<sup>11</sup> Such holdings must be disposed of promptly.

<sup>8</sup> The purchase of other bonds is prohibited. Bonds that lose their rating after purchase are valued at the average market price for the eighteen months just preceding examination and 50 per cent of net depreciation deducted in computing net sound capital. Total depreciation is treated as a loss for securities in default and stocks. A somewhat similar rule was invoked temporarily in 1931, when the Comptroller of Currency ordered that national banks should be permitted to carry Government, state and municipal, and other bonds of the four highest ratings (e.g., Moody's—Aaa, Aa, A, and Baa) at their book value and disregard market fluctuations.

<sup>9</sup> See below, pages 519-520.

<sup>10</sup> Commercial banks are, however, required to amortize bond premiums unless they charge them off at the time of purchase.

<sup>11</sup> Minor exceptions are made for the stock of (a) corporations conducting a safe deposit business, (b) banks engaged in international or foreign banking, and (c) national agricultural credit associations.

The following is a table of investments held by all national banks:

INVESTMENTS OF NATIONAL BANKS\*

(Millions of Dollars)

	1940†		1950‡	
	<i>Amount</i>	<i>%</i>	<i>Amount</i>	<i>%</i>
U. S Government Obligations	\$ 7,220	55.9		
Govt Guaranteed Obligations	1,891	14.7	\$35,692	83.0
Federal Agencies—not Guaranteed	262	2.0		
State & Municipal Bonds	1,928	14.9	4,687	10.9
Railroad Bonds	485	3.8		
Public Utility Bonds	346	2.7		
Industrial Bonds	353	2.7	2,468	5.7
Other Bonds	84	0.7		
Foreign Bonds	118	0.9		
Federal Reserve Banks and Other Stocks	217	1.7	176	0.4
Foreign Stocks	1			
Total Investments	<u>\$12,905</u>	<u>100.0</u>	<u>\$43,023</u>	<u>100.0</u>

† As of June 30

‡ As of December 30

\* Annual Reports of the Comptroller of Currency, 1940, 1950

**Return from loans and investments.** Although the individual banks do not publish details of earnings, combined figures for national banks are reported by the Comptroller of Currency, from which the figures on page 488 have been computed to show the earnings from loans and discounts and from investments for the period 1929-1950. The return on loans and discounts is generally higher than the return on bonds. Loans and discounts often have the further advantage of bringing the bank profitable deposit balances, but they require greater care and expense in their management. The low return on investments, which are very largely bonds, is due to the heavy proportion of United States obligations, which increased considerably after 1930 and showed much lower yields after 1929.

**Real estate.** The banking house with its furniture and fixtures may be listed as such, or as real estate. It is not usual for a bank to hold other real estate. In fact, national banks are not permitted to hold other real estate, except as it happens to be acquired in the satisfaction of some debt they are collecting. Even then they are required to dispose of such real estate within five years. This requirement is based on sound principle, in that it aims to keep bank

assets in a readily convertible form. The item "Other Real Estate" generally increases during a period of business depression if any substantial holdings of real estate mortgages are present.

### GROSS AND NET RETURN ON LOANS AND INVESTMENTS OF ALL NATIONAL BANKS\*

1929-1950

(Percentages)

Years ended Dec. 31	Loans and Discounts				Investments				Bal- ance
	Inter- est	Losses	Recov- eries	Bal- ance	Int. & Divds.	Profits	Losses	Recov- eries	
1929 . .	6.13	.62	.11	5.62	4.52	.57	0.94	.13	4.28
1930 . .	5.63	.92	.11	4.82	4.56	.60	1.05	.10	4.21
1931 . .	5.18	1.62	.13	3.69	4.15	.58	2.47	.13	2.39
1932 . .	5.34	2.49	.17	3.02	4.07	.53	2.51	(a)	2.09
1933 . .	4.78	3.56	.22	1.44	3.60	.67	3.23	(a)	1.04
1934 . .	4.68	3.85	.41	1.24	3.39	1.29	2.23	(a)	2.45
1935 . .	4.58	2.15	.64	3.07	2.91	1.66	1.07	(a)	3.50
1936 . .	4.49	2.00	.90	3.39	2.70	1.31	.76	1.00	4.25
1937 . .	4.35	.84	.58	4.09	2.65	.56	.76	.28	2.73
1938 . .	4.39	.94	.38	3.83	2.55	.82	.96	.28	2.69
1939 . .	4.47	.77	.46	4.16	2.37	1.00	.87	.27	2.77
1940 . .	4.41	.62	.39	4.18	2.18	.81	.83	.31	2.47
1941 . .	3.89	.30	.24	3.83	1.84	.50	.58	.30	2.06
1942 . .	4.23	.42	.40	4.21	1.29	.11	.27	.13	1.26
1943 . .	3.63	.43	.53	3.73	1.46	.16	.19	.17	1.60
1944 . .	3.29	.37	.46	3.38	1.50	.16	.16	.12	1.62
1945 . .	2.97	.24	.30	3.03	1.45	.28	.15	.11	1.69
1946 . .	3.33	.29	.27	3.31	1.56	.21	.15	.07	1.69
1947 . .	3.68	.38	.23	3.53	1.61	.14	.16	.06	1.65
1948 . .	3.95	.21	.13	3.87	1.64	.09	.14	.06	1.65
1949 . .	4.13	.25	.25	4.13	1.67	.09	.05	.02	1.73
1950 . .	4.25	.15	.15	4.25	1.65	.14	.06	.03	1.76

(a) Recoveries and profit not reported separately.

\* Compiled from *Annual Reports of Comptroller of Currency*. Based on average asset figures through 1940, and December 31 figures thereafter.

The valuation of the real estate should be studied over a series of years. Occasionally a bank writes this asset down year by year by excessive amounts, so that in some cases it stands at a nominal value. Some argue that this hidden "reserve" is doubly desirable. First, it is pointed out that a banking house is a specialized structure that would have little use except for the purpose in hand and that is not likely to be worth cost in case of liquidation; and second, that in the face of some special emergency, such as a defalcation, this asset might be increased once more on the books, thereby offsetting the loss and preventing the wiping out of surplus. Because such a

writing down of real estate is arbitrary, it can be detected only by a careful examination year by year, and should be watched, because it will understate the undivided profits on the opposite side of the statement.

**Reserves and deposits.** For the banker, the term "reserve" has a meaning that is closely akin to that of popular usage, and is applied to certain of the assets. The actual, or "primary," reserve of a bank is the cash that it keeps on hand, together with its balances in other banks. It is used to meet the day-to-day demand of its customers either as withdrawals are made over the counter or through the presentation of checks by other banks. Under the amended Federal Reserve Act, banks that are members of the Federal Reserve system are required to keep an amount equal to a certain per cent of their deposits on deposit with the Reserve bank, which balance is known as the *legal reserve*. The various states, in prescribing the minimum reserve for banks incorporated under the state law, include, in their definition of reserve, cash in vaults and balances kept with certain specified banks designated as legal depositories.

The need for reserves will vary with the character of the deposits. Larger reserves for demand deposits than for time deposits are essential for safety. Again, in large cities, where depositors' balances are likely to vary the most in size, the need will be greater than in a smaller place with less active accounts of more uniform size. An exceptional small bank comes to mind at this point. Its statement showed a reserve that would have appeared high for a large metropolitan institution. Inquiry developed the fact that this bank held a very large deposit from the state, against which it was necessary to hold an almost 100 per cent reserve. The receivership of another bank of substantial size was precipitated during a period of difficulty because of the decision of municipal authorities to withdraw large deposits. The legal reserve requirements may under different conditions, then, be more or less than adequate for safe banking.

The minimum ratios of legal reserves to deposits required under the Federal Reserve system are currently as follows:<sup>12</sup>

<sup>12</sup> *Federal Reserve Bulletin*, May, 1952, p. 404. Reserve requirements for demand deposits in suburban banks located in reserve and central reserve cities may be lowered with the consent of five members of the Board of Governors. Requirements are changed from time to time by action of the Board as a matter of credit policy.

	<i>Percentage Demand Deposits</i>	<i>Percentage Time Deposits</i>
Central Reserve City Banks (New York and Chicago)	24	6
Reserve City Banks (includes banks of about 60 cities)	20	6
Country Banks	14	6

The combined national bank statements, given above, show *total* reserves of 26.6 per cent ( $23,813 \div 89,530$ ) against all deposits in 1950 and 42.0 per cent in 1940. *Legal* reserves would consist only of balances on deposit with Federal Reserve banks, and to find the legal reserve ratio they would be compared with *net* deposits; that is, after subtracting cash items in the course of collection, technically known as "float."

**"Secondary" reserves.** The second line of defense consists of loans and discounts and bonds which may be turned into cash whenever necessary upon short notice. Since the passage of the Banking Act of 1935, the Federal Reserve banks have been permitted to make advances upon almost any type of bank asset: long maturity loans, real estate loans, civil and corporate bonds, collateral loans, and installment paper. This broadened power is particularly useful in an emergency. The commercial banker will feel greater assurance, however, in seeking Reserve bank accommodation when he presents short-term commercial and agricultural paper, the normal repayment of which will liquidate his own obligation. The conservatively managed bank will try to have a fair proportion of its loans of this sort, and in case such paper is not to be had from the regular customers of the bank, it may purchase the offerings of a commercial paper house. The commercial paper house acts as a merchant of commercial paper selling the short-term, single-name paper of concerns with a high credit standing without indorsement to banks throughout the country. Such purchased, or open-market, paper characteristically pays less than direct loans to customers of the bank and brings no profitable deposit balances with it.

Marketable bonds to the extent of their market value are also a valuable support to cash. Previous comments as to the need for high quality and short maturity to insure price stability should be kept in mind. Because of the difficulty of selling large amounts of bonds without disturbing the market, the major metropolitan banks occupy a more difficult position than do smaller banks. The active and broad market for short-term United States obligations, which has the sup-

port of the Federal Reserve banks, is especially helpful and explains the higher proportion of such securities held in New York and Chicago where many of the deposits of other banks are held. Cash needs have been met in recent years more often by the sale of Governments than by borrowing from the Federal Reserve banks.

Sound policy would dictate that demand deposits be invested in loans and discounts, other than real estate loans, and in short-term investments that are both marketable and stable in price. During the extreme convulsions leading up to the 1933 banking moratorium, United States Government obligations were virtually the only securities meeting this standard. For time deposits, more permanent investments in the form of real estate loans, term loans running for more than one year, and high-grade bonds would appear suitable. The parallel between time deposits and investments on the one hand, and demand deposits and loans on the other, could be traced in the national bank figures of the 1920's. Since then, loans and discounts have included a growing amount and variable proportion of mortgages and terms loans that are more suitable for the investment of time than demand deposits. On the other hand, a varying proportion of the investments have been short-term Governments suitable for secondary reserves needed for demand deposits. Consequently, the study of the relation of lending and investment policy to type of deposits is not readily made in the balance sheet figures generally available.

In the case of mutual savings banks accepting only time deposits, long-term investments have had a favorable record. The heavy investment of the mutual savings banks in real estate first mortgages and bonds and the relative stability of their deposits in the difficult period 1929-1932 are shown in the accompanying condensed comparative balance sheet. But commercial banks subject to heavy withdrawals in a period of suspicion have found time deposits as prone to flight as their demand deposits. Furthermore, to require advance notice of withdrawal of time depositors is generally impractical because of its effect in impairing confidence and hastening the withdrawal of demand deposits. But unless commercial banks can make permanent investments with funds left by time depositors, a fairly regular rate of interest upon deposits becomes impossible. Some students of banking hold that the investment function should be entirely divorced from commercial banking and placed with other

financial institutions, such as the savings bank and the savings and loan association.

### MUTUAL SAVINGS BANKS\*

#### SUMMARY OF REPORTS OF CONDITION

AS OF JUNE 30

(In Millions of Dollars)

<i>Resources</i>	1929	1932	1940
Cash on Hand and Due from Banks . . . . .	\$ 224	\$ 443	\$ 979
Investments . . . . .	3,776	4,195	5,262
Real Estate Loans . . . . .	5,315	5,884	4,835
Other Loans and Discounts . . . . .	486	257	92
Banking House and Fixtures . . . . .	110	132	124
Other Real Estate . . . . .	23	127	571
Miscellaneous Assets . . . . .	72	94	89
	<u>\$10,006</u>	<u>\$11,134</u>	<u>\$11,952</u>
<i>Liabilities</i>			
Demand Deposits . . . . .	\$ 99	\$ 3	\$ 3
Time Deposits . . . . .	8,903	10,036	10,628
Other Liabilities . . . . .	18	44	25
Reserves for Dividends, Contingency, etc. . . . .	14	8	111
Capital Notes and Debentures . . . . .			8
Surplus . . . . .	824	890	868
Undivided Profits . . . . .	148	153	309
	<u>\$10,006</u>	<u>\$11,134</u>	<u>\$11,952</u>
Number of Banks . . . . .	611	594	551

\* Condensed from Reports of the Comptroller of Currency.

The events leading up to the banking moratorium of 1933 demonstrated the necessity of maintaining public confidence if even reasonably sound banks are to be kept open. Numerous failures accompanied by exposures of unsound practices resulted in wholesale withdrawals from both strong and weak banks. One institution, for example, closed only after liquidating over 90 per cent of its deposits. Any bank able to pay off so large a proportion of liabilities in a short space of time is a victim of unreasoning fear rather than of unliquid or unsound investment. The ability of such relatively non-liquid institutions as the mutual savings bank to come through the period of 1929-1934 with small or no losses of deposits and virtually no failures emphasizes the importance of confidence.

**Fixed banking assets.** Although both real estate mortgages and long-term bonds are usually fixed assets in the general sense of that

word, being held for periods longer than one year, seldom are they so classified; only the real estate is ordinarily so set apart. The permanent assets in the form of banking house and investments in the capital of foreign branches should be materially less than the bank's net worth.

Clear statements of condition are helpful in allaying suspicions of weakness, especially among large depositors, and some banks have published reports of more than usual clarity. Balance sheets may be useful in building prestige by reflecting conservative policy in such matters as investing in short maturities of high-grade bonds, conservative asset valuations, and the creation of reserves for contingencies.

Assurance that the balance sheet value is conservative is sometimes given by the statement that it does not exceed market value.<sup>13</sup> Better still, especially for the analyst concerned with the stockholders' position, is an actual statement of market value.<sup>14</sup> The most satisfactory practice is an actual schedule of the bonds held, which permits not only valuation but an estimate of quality.<sup>15</sup> Such publicity has been put in practice by only a few pioneering institutions.

The reader is interested in two points about the loans and discounts: first, whether or not they may be converted into cash quickly in case of need; and, second, their quality, a difficult thing for an outsider to decide at any time, and one which is less important as banks have come to rely upon large secondary reserves of short-term Governments. In a time of stress, present laws would permit Federal Reserve lending on any sound assets.

To give satisfactory evidence as to the quality of the loans is also

<sup>13</sup> Thus, the Royal Bank of Canada stated in its report of Nov. 30, 1933, at a time when conditions were difficult that its securities were carried at amounts "not exceeding market value."

<sup>14</sup> The Lawrence County Trust Company of New York City stated: "In April, 1933, the policy of carrying all securities at the current market value was adopted. Since that time market quotations reflect an appreciation in value of \$313,215.74. In keeping with sound and constructive banking practice, our Directors decided that this appreciation should be carried as a 'Special Reserve' against which any subsequent depreciation in market value may be charged."

<sup>15</sup> The Corn Exchange Bank and Trust Company of New York City in 1933 published a list of its securities at par value as of Feb. 1, 1933. This list could have been valued and appraised as to quality by the interested reader. The First National Bank of Englewood, located in Chicago, in its report for Dec. 31, 1930, appears to have given the first detailed list of security holdings ever published by a bank in this country.

difficult. Classification may be helpful. Thus, bankers' acceptances and purchased commercial paper have the reputation of virtually never showing a loss. One small bank has published a detailed list of its customers' collateral loans, omitting the names of the borrowers and grouping the loans as those having more and less than a 50 per cent margin. A larger bank might achieve the same clarity by a short statistical presentation of the amount of loans with each degree of margin protection. The same small bank gave a list of its real estate loans with the amount owed and the address of the mortgaged property for each loan.

But any active bank serving commercial interests will ordinarily have a large amount of unsecured loans based on the general credit of the borrowers. The "commercial and industrial loans" shown above on page 484 are generally of this type. Any statement as to the maturity of such loans or the length of time they have been carried can give no certain notion of their value. When and how much any particular loan should be written down is a matter of judgment within rather wide limits, subject always to review by the bank examiner. A similar area for the exercise of judgment exists even in the field of secured loans. Consequently, the management has the difficult problem of being sufficiently conservative to protect the depositors, but sufficiently just so that the stockholders may not be misled by a grave understatement of their net worth and earnings. Probably in no other field involving such large public interests is there more uncertainty for the investor as to the meaning of the statements—partly because of the difficulty of valuing loans and discounts in even the most clearly stated balance sheet, partly because the statements themselves are so frequently inadequate in detail, and partly because of relatively heavy deposit liabilities which make any fluctuation in the value of the assets bulk large for the small net worth.<sup>16</sup>

**Federal Reserve banks.** The Federal Reserve banks are of major importance serving as a bank for the commercial banks which are members of the system. Membership is compulsory for national banks, optional for state banks, and includes the bulk of the larger

<sup>16</sup> A well-stated annual report can often engender confidence by frankness on what are known as potential hazards. An example is the statement of the chairman of the board to the stockholders of the Bank of the Manhattan Company at the 135th annual meeting (Dec. 5, 1933), in which such matters as mortgage loans and foreclosure problems, loans to German debtors, audit by directors, officers' salaries, and policy on loans to officers and employees were discussed.

banks. A Federal Reserve bank will accept certain types of paper for rediscount or make secured advances to member banks and credit their accounts. By creating additional deposit balances, which serve as legal reserves for member banks, the credit situation can be eased materially in times of financial stress.

Whereas the ordinary bank must meet its obligations with cash, the Federal Reserve banks may issue their own paper money, the Federal Reserve notes. Money reserves, consisting chiefly of gold or gold certificates prior to March, 1933, but now of gold (bullion) certificates and other lawful money, are held by these central banks as their reserve against their own notes and deposits. A partial view of that portion of the balance sheet affected by rediscounting and note-issuing operations might appear as follows:

Cash	\$1,000,000	Deposits of Member Banks	\$750,000
Discounted Paper	500,000	Federal Reserve Notes	750,000

By so-called open-market operations—that is, the purchase of Government obligations in the open market—the Reserve banks can add to their earning assets and to the deposit balances of their member banks. These balances, serving as legal reserves, make it that much easier for the commercial banks to increase, in turn, their loans and investments. By open-market selling, the Reserve banks can reverse the process and contract the volume of credit.

The following condensed statement of the combined resources and liabilities of the twelve Federal Reserve banks on March 8, 1933, just after the banking moratorium had been declared, shows the condition of the system at a time when the reserve ratio had fallen to 45.6 per cent, which was regarded as low at the time. In the years that followed, a large inflow of gold from the rest of the world increased the gold reserves from \$2.7 to \$19.5 billion. Member banks repaid their borrowings to the reserve banks. The increase in the deposits of member banks with the Federal Reserve was so large that substantial excess reserves greatly exceeding legal requirements resulted. This excess made it easy for the commercial banks to purchase considerable amounts of U. S. obligations without any credit expansion by the Federal Reserve in the early part of the war period. Subsequently the latter bought Federal securities also, as reflected in the 1950 balance sheet, which laid the basis for further expansion of member bank credit and issues of Federal Reserve notes. The re-

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serve ratio of 90.8 per cent in 1940 fell to 46.4 per cent in 1951 and more than half of the assets of the reserve banks consisted of U. S. Government securities in the latter year.

## FEDERAL RESERVE BANKS\*

## COMBINED CONDENSED BALANCE SHEETS

As of December 31 1951 and 1940 and March 8 1933

(Millions of Dollars)

<i>Assets</i>	1951	1940	1933
Gold Reserves	\$21 468	\$19 760	\$2 684
U. S. Notes, Silver and Other Cash	323	275	125
Discounts and Advances	19	4	1 414
Bills Bought in Open Market			417
Industrial Loans	5	8	
United States Government Securities	23 801	2 184	1 881
Uncollected Items	3 905	912	357
All Other Resources	378	121	166
Total	<u>\$49 900</u>	<u>\$23 264</u>	<u>\$7 045</u>
<i>Liabilities</i>			
Deposits	\$21 192	\$16 126	\$1 951
Federal Reserve Notes	25 064	5 931	4 215
Deferred Availability Items	2 721	833	422
Other Liabilities	14	3	28
Capital Paid In	237	139	150
Surplus	672	233	279
Total	<u>\$49 900</u>	<u>\$23 264</u>	<u>\$7 045</u>
Ratio of Reserves to Deposits and Federal Reserve Notes Combined	46.4%	90.8%	45.6%

\* Annual Report of the Board of Governors of the Federal Reserve System 1940 pp 32-33 Federal Reserve Bulletin February 1942 p 157

A falling reserve ratio may result either from exports of gold (that is, loss of reserves), or from borrowing by member banks desirous of increasing their balances or of obtaining currency to meet their customers' needs. The discount of commercial paper, for example, would increase the asset, Discounted Paper, and either the deposits or notes opposite. A sale of a Government security would have the same effect. A deposit with the Reserve bank is like so much cash, from the standpoint of the member bank, and constitutes its total legal reserve against its own deposit liabilities.

The Federal Reserve Act requires that the Reserve banks maintain a minimum reserve in gold or lawful money of 35 per cent against the deposits, and not less than 40 per cent in gold against

the outstanding Federal Reserve notes, except in periods of emergency when penalties are imposed for its suspension. (Since 1933, gold certificates have taken the place of gold.) Businessmen as well as bankers and economists follow the changes in the condition of the Reserve banks, as indicated by their reserve ratios and their discount rates, since they are the base of our commercial banking system.

**Earnings and expenses.** A detailed statement of a commercial bank's earnings and expenses will ordinarily be available only to those who are within the bank, but the following list of earnings and expense accounts is suggestive of the nature of the bank's operations. Statements of the combined earnings and expenses of national banks may be found in the annual reports of the Comptroller of the Currency and the Federal Deposit Insurance Corporation.

Current Operating Earnings:

Interest on U. S. Government Obligations.

Interest and Dividends on Other Securities.

Interest and Discount on Loans.

Service Charges and Fees on Banks' Loans.

Service Charges on Deposit Accounts.

Other Service Charges, Commissions, Fees, and Collection  
and Exchange Charges.

Trust Department.

Other Current Earnings.

Total Earnings from Current Operations.

Current Operating Expenses:

Salaries—Officers.

Salaries and Wages—Employees.

Fees Paid to Directors and Members of Executive, Discount,  
and Other Committees.

Interest and Discount on Borrowed Money.

Taxes Other than on Net Income.

Recurring Depreciation on Banking House, Furniture, and  
Fixtures.

Other Current Operating Expenses.

Total Current Operating Expenses.

Net Current Operating Earnings.

**Recoveries, Transfers from Valuation Reserves, and Profits:****On Securities:****Recoveries.**

Transfers from Valuation Reserves.

Profits on Securities Sold or Redeemed..

**On Loans:****Recoveries.**

Transfers from Valuation Reserves.

**All Other**

Total Recoveries, Transfers, and Profits.

**Losses, Charge-Offs, and Transfers to Valuation Reserves:**

(Loss list similar to that under Recoveries above)

- Total Losses, Charge-Offs, and Transfers to Valuation Reserves.

- Profits before Income Taxes.

Taxes on Net Income.

Federal.

State.

Net Profits before Dividends.

Cash Dividends Declared

Net Additions to Capital from Profits.

Also various memoranda and ratios are appended. In addition to the combined dollars results, percentage analyses of the earnings statements are given.

Averages of the earnings figures of groups of banks as published by the Comptroller of Currency for national banks, by the Federal Deposit Insurance Corporation for insured banks, and by the Federal Reserve Board for members of that system provide comparative material for the management of the individual bank. Because they represent more homogeneous groups of banks, the earnings studies of the Comptroller, the Federal Deposit Insurance Corporation, and the various Federal Reserve banks by localities and by sizes are of even greater comparative value to the banker and to the investor.

The earnings and dividend records of the national banks in their relation to total net worth are shown in the following table for se-

lected years over a period beginning with the prosperous 1929 and extending through severe depression years and through the subsequent recovery period.<sup>17</sup> Earnings have varied greatly. In 1936, the unusual recoveries and profits raised the average earnings to 10 per cent. In the 1920's, when times were good, dividends ran between 5 and 6 per cent of net worth. The later years shown in the table show a lower rate, running in the neighborhood of 3½ per cent during the 1940's. This low rate has reflected banking tradition in the matter of a conservative retention of earnings, a real need to restore the ravages of depression losses, and a need to build net worth to keep pace with bank deposit expansion. The earnings have been moderate, varying from 7 to 10 per cent on total net worth in prosperous years with much of the experience nearer to the lower figure. Losses and charge-offs were so considerable during the early 1930's that each of the four years 1931-1934 showed a net deficit.

#### EARNINGS AND DIVIDENDS OF NATIONAL BANKS

##### IN RELATION TO CAPITAL SURPLUS AND UNDIVIDED PROFITS

Years Ended December 31

1929-1950

Year	Net Before Recoveries & Losses (Per Cent)	Net Profits (Per Cent)	Dividends (Per Cent)
1929	10.8	7.8	6.0
1930	8.6	4.0	5.4
1933	8.1	9.6d	2.4
1935	7.9	5.1	3.7
1936	7.4	10.0	3.8
1937	7.4	7.1	3.8
1940	5.6	7.0	3.8
1943	8.2	9.1	3.4
1945	8.1	11.0	3.5
1948	9.2	7.6	3.5
1949	9.7	8.2	3.5
1950	9.7	8.7	3.7

d—deficit

<sup>17</sup> Compiled from *Annual Reports of the Comptroller of Currency*. Earnings data are available for years beginning 1917 on calendar year basis, for years beginning 1869 on June 30 fiscal year basis. A study of "Profits of Commercial Banks" by Rollin Posey presents figures for national banks for the years 1908-1928 (*Harvard Business Review*, July, 1930, pp. 425-434).

The foregoing figures are in contrast with the figures sometimes published of percentages earned or paid on capital stock alone or capital stock and surplus, which, because they do not include the whole net worth, give an exaggerated picture of banking profits.

Because of the variable effect of the write-off of loans and investments, the net earnings before recoveries and write-offs of all kinds were included in the table and reveal the write-off factor as the chief source of variation in bank profits.

The excess of the return upon the net worth over the rates of return from loans and investments shown above on page 488 is the profit derived from the presence of the depositors' funds. If it were assumed that the funds of the bank stockholder could be invested directly to return 4 per cent net, without being engaged in banking, and if they actually earn 7 per cent when so used, the differential of 3 per cent could be attributed to profit from the employment of depositors' funds.

**Ascertaining profits from balance sheets.** Although a statement of bank earnings is the exception rather than the rule, an increasing number provide some information as to nonrecurring items of gain or loss, so that the stockholder can determine what portion of the net income is from ordinary current sources.<sup>18</sup> Where an income statement is supplied, it may be possible to compare it with combined figures for banks similar in size or location, such as are published by the Federal Deposit Insurance Corporation. Some of the more important points to receive attention in the income statement are:

1. The relation of interest earnings to the various earning assets, the U. S. securities, other bonds, and loans and discounts.
2. Sometimes other sources of operating earnings, such as service charges or trust department income will be found to be of importance.
3. The expense of interest paid on time and savings deposits will receive attention, especially when a change in the rate may affect earnings. During the 1930's, when interest rates were declining and reducing bank income, the counterbalancing saving on reduced interest paid to depositors was important. Increasing competition for savings after 1945 produced increases in rates paid depositors.

<sup>18</sup> The practice of some major banks is reviewed in S. E. Bain, "Annual Reports for Banks," *Harvard Business Review*, November, 1951, pp. 103-111.

4. Income tax data make possible a judgment as to the possible impact of tax rate changes upon bank earnings.

5. Most vital in the interpretation of earnings is information that will permit ordinary operating earnings to be separated from the unusual and irregular gains and losses, such as capital gains and losses on the sale and redemption of securities, write-downs of securities because of market declines below book value, and allowances for loan and investment losses.

Reference has already been made to national bank data on rate of return on earning assets and on the stockholders' net worth.

Although the earnings statement is absent from most reports, the consecutive balance sheets will show the changes in surplus and undivided profits. By finding the difference in the surplus and undivided profits given in the balance sheet at two different dates, and then allowing for dividends paid in the interval, one may learn the net profits. The amounts of the dividends and the dates of their payment may ordinarily be had by inquiry at the bank. Earnings estimated in this manner are sometimes referred to by reporting investment services as "indicated earnings."

Because of the lack of an earnings statement, it is necessary to exercise care in this matter. Sometimes the bank issues stock during the interval under study for an amount more than par value. In such a case, one must make allowance for the consequent unearned increase of surplus. On other occasions, the undivided profits or surplus fails to show the normal increase because of the writing off of some asset, a loss that is not, properly speaking, a current operating loss. A few banks in recent years have stated the amount of these extraordinary write-offs, thereby permitting the stockholder to learn the results of ordinary operations for the year. A new administration sometimes finds it wise to write loan and security values down to a conservative basis at the outset of its career and so prevent this unpleasant event from marring the record later.

The formula for finding bank earnings for the interval between two balance sheets might be stated:

$$\text{Net Earnings} = \text{Dividends} + \text{Increase (or - Decrease) in Surplus and Undivided Profits} - \text{Any Surplus Paid in by Stockholders During the Interval}$$

The following illustrates the method used in finding the amount and rate of earnings:

	Jan. 31, 1950	Feb. 28, 1951
Capital Stock (par value, \$100) . . . . .	\$2,000,000	\$2,000,000
Surplus . . . . .	1,000,000	1,000,000
Undivided Profits . . . . .	580,000	540,000
<b>Total Stockholders' Interest . . . . .</b>	<b>\$3,580,000</b>	<b>\$3,540,000</b>

The par value of the stock being \$100, there are 20,000 shares of stock, the book value of which was \$179 on January 31, 1950, and \$177 on February 28, 1951. A dividend distribution of \$10 per share occurred during the interval. The rate of return is calculated, then, as follows:

Dividends Paid During Interval	\$ 10 00
Decrease in Book Value per Share for Period	2 00
Net Amount Earned During Interval (13 months)	\$ 8.00
Rate of Earnings per Year per Share ( $\frac{1}{13}$ of \$8)	7 38
Book Value per Share on Jan. 31, 1950	\$179 00
Rate of Profit on Book Value (\$7.38 divided by \$179)	4 12%

In the above case, the dividends were greater than the earnings, with the result that undivided profits were reduced. The earnings were sufficient, however, so that the dividends of \$10 per share reduced the book value only \$2; in other words, for the 13 months, they amounted to \$8.

Two ideas concerning dividend policy are current in banking circles: first, that reduction of the dividend rate is unfortunate and reflects upon a bank's prestige; and second, that a dividend should be paid only from earnings of the current year, except under the most unusual circumstances. These ideas result in the banking rule that the dividend rate should be advanced only when there is excellent assurance that it can be maintained. The practice of this rule should result in growing surplus, stable dividends, and a generally high regard for the stock of the bank as an investment. The rapid growth of deposits since 1933 and unsettled world conditions have made conservative surplus policy seem particularly appropriate.

**Summary.** The analysis of bank statements is most commonly undertaken from the standpoint of either the depositor, whose interest is in solvency, or the stockholder, who is interested in solvency, earnings, and dividends. Liquidity, or the ability to meet liabilities

promptly, is most commonly measured by comparing Cash and Cash plus United States securities with Deposits. Governments of short maturity with less danger of adverse price fluctuation are preferable to long maturities for such secondary reserve purposes. Consideration should be given to the probable differences in the need for meeting deposit withdrawals. If the information were available and necessary, all liquid assets, which would include all assets that could be converted into cash within 24 hours, might be ascertained to determine the bank's liquidity. Actually, the large cash and Government holdings of recent years have made such a refined check of doubtful necessity, at least for most major banks. Less liquid assets, such as term loans and real estate mortgages, should be limited to that fraction of the deposits that can be regarded as fairly permanent. A reputation for liquidity and soundness will reduce the chances of unreasoning withdrawals that would test the bank's liquidity.

The relation of the protecting stockholders' interest to the liabilities is watched by both depositor and stockholder. The ratio is often stated as Deposits to Net Worth. Inasmuch as deposits supply most of the funds from which banking profits are derived, a high ratio is regarded as an indication of high potential profits.<sup>19</sup> The presence of a small net worth may, however, limit the ability of a bank to extend credit and assume normal lending risks, so that its earnings will be limited in spite of large deposits. Sometimes the risk ratio employed compares net worth to risk assets, the latter usually defined as assets other than cash and Governments. Net worth is needed not to protect deposits in the abstract, but to cover losses in those asset values that are subject to shrinkage

Earnings and dividends are most suitably studied in relation to the total net worth. The investor will also compare earnings, dividends, and book value with the market price that he would have to pay to acquire the stock. Allowances should be made whenever abnormal, or nonrecurring, losses or gains occur. Unfortunately, information is frequently lacking as to the source or nature of earnings. The record must also be read in the light of the ability of the management, often indicated in the statements, and the economic

<sup>19</sup> It should not be assumed from this statement that the profits of the bank are contributed by the depositors in the proportion that their balances bear to net worth, because the bulk of the income derived from the investment of the deposits is used up in services to depositors. See above, p. 499.

possibilities of growth in deposits and opportunities for lending to the community.

Banks, like the public service corporations, reflect the general state of business health to a considerable degree. Aside from this general background, the analyst will need to remember that two major influences have entered the banking field to make it necessary to use caution in drawing analogies with the past. The first is the enlarged place occupied by the Federal government's monetary and fiscal policy. The immediate influence has appeared in the effect upon interest rates. Over the longer run such controls may be equally important in their general effects upon business stability. The second influence is the insurance of bank deposits by the Federal Deposit Insurance Fund. Probably the most important economic effect of such insurance will be to remove panicky and unreasoned runs on sound institutions in periods of economic upset. Although insured depositors have a legal claim only against the insurance fund, the measure places the effective responsibility for the solvency of all insured banks on the doorstep of the Federal government.

In a time of disturbed economic conditions, the analyst of the bank's financial statements finds it particularly necessary to read them in the light of changing external influences.

## CHAPTER XVIII

### The Statements of Insurance Companies

**Significance of insurance.** So much is spent for insurance that a knowledge of what is relevant and important in the statements of insurance companies should be valuable to the businessman and the banker. The failure of companies from time to time indicates the need for care even though regulation does exist. A study of the financial statements is useful in detecting weakness.

To understand the statements of insurance companies, it is essential that the more general facts about the nature of the business be learned. In the field of insurance, three kinds are of prime importance: life, fire, and casualty insurance. Other types of insurance are based on principles similar to those of life and fire insurance, and the construction of the statements of such companies will give rise to practically no new problems, save in the matter of detail. Casualty insurance has much in common as to principles with fire insurance.

Insurance companies are incorporated under special state laws just as banks are; similarly, they are subject to examination and tests of solvency, and, in the case of life insurance companies, they are, in the interest of safety, limited in their investments. Such legislation serves to emphasize the peculiar importance of this business, which has become indispensable to our present economic system. Life insurance is important to as many people as are the banks. Everyone, from the wage-earner who pays his twenty-five cents per week for an "industrial" policy, to the wealthy man who purchases a policy for hundreds of thousands of dollars, has a stake in the business.

**Insurance reports.** One can judge the relative safety of the various fire and other property insurance companies from the statements as they are published. When one is assured as to the safety of the concerns examined, the problem of choosing a property insurance company is largely solved. There remain only the matters of premium cost (and usually the premium rates are the same or sub-

stantially so, as a result of competition or the use of a common rating bureau) and of satisfactory service. In the case of life insurance companies, the policy contract normally extends over a number of years, and thus not only present solvency but also efficiency of operation is a matter of concern to the policyholder. The operating data that are published make possible an estimate of the relative merits of the various companies.

Because of the distinctive nature of the life insurance companies, they should be considered separately. Such companies report annually to the insurance departments of the state in which they are incorporated and of the states in which they do business. These reports are published annually and often contain considerable detail that is omitted from the one published by the company for its policyholders. The latter sometimes furnishes supporting material, and sometimes interpretation, that is not found in the formal report to the state. The annual publications of Alfred M. Best Company and the Spectator Company are also regarded by insurance men as standard sources of information.

The value of state supervision and the increased appreciation of sound insurance principles may be realized when it is known that no big life insurance companies failed after 1890 until the depression of the early 1930's, when a few companies located in states with weak regulation suspended operation. In contrast to this is the fact that nearly all of the life insurance companies organized between 1865 and 1869 failed before 1875.

**Growth of life insurance.** The figures in the following table give an idea of the magnitude of the life insurance companies' business:<sup>1</sup>

Year	No. of Policies in Force *	Amount of Policies in Force	(In Millions)
			Gross Assets
1900 . . . . .	14	\$ 8,562	\$ 1,742
1910 . . . . .	30	16,404	3,876
1920 . . . . .	68	42,261	7,320
1930 . . . . .	128	107,948	18,880
1940 . . . . .	137	117,794	30,802
1950 . . . . .	210	241,981	63,984

\* Includes group certificates as well as individual policies.

<sup>1</sup> Compiled from *Life Insurance Fact Book, 1951*, which draws data from *Spectator Year Book* and the Institute of Life Insurance. These figures for U. S. companies include their foreign policyholders.

This huge growth of assets is fairly well known, although there are few who appreciate the purpose of the accumulation. Indeed, the size of the assets originally caused suspicion. The large amounts were regarded by many people as the result of overcharges, and this feeling led to the formation of assessment companies and fraternal insurance orders with inadequate rates.

**Mortality tables.** Life insurance rates, or premiums, are based upon statistical information as to the number of deaths occurring among persons of different ages. These figures are constructed into mortality tables. The general agreement of the various mortality tables and the success of their application have justified confidence in their use. At the present time the *Commissioners' Standard Ordinary Table* has been adopted by most companies. A considerable amount of business of the past is still done which is based on the older *American Experience Table*. This latter was compiled in 1868 by Sheppard Homans, and based upon the experience of the Mutual Life Insurance Company of New York, with such modifications as its author thought desirable. It gradually superseded the *Actuaries' Table*, from which it did not differ radically. The *American Experience Table* showed a slightly lower death rate for the ages from 30 to 78 than the "Actuaries'" or "Combined Experience" Table, which was issued in 1843 and was derived from the experience of seventeen English life insurance companies. The newer *Commissioners' Standard Ordinary Table* is based upon the more recent experience of American and Canadian companies and reflects the substantially lower deaths, especially at the younger ages, that have resulted from the advances in medical science and sanitation.

#### DEATH RATE PER 100

Age	Commissioners' Standard Table	American Experience Table	Actuaries Table
25	.288	.81	.78
35	.459	.89	.93
45	.861	1.12	1.22
55	1.798	1.86	2.17
65	3.964	4.01	4.41
75	8.864	9.44	9.56
85	19.413	23.56	20.51

**Mortality and the level premium.** Without going further into detail concerning the construction of these tables, it is evident that,

with advancing age, mortality increases. If a group of men paid into a fund each year just what was necessary to meet that year's death loss, the amount would be very low at first, but would become more burdensome with time and, finally, prohibitive. Such an amount would be \$4.59 (per \$1,000) at the age of 35 and \$194.13 at the age of 85, according to the *Commissioners' Table* above. Because of the prohibitive figure at advanced ages, a level, rather than an increasing, premium is generally regarded as the most satisfactory form of life insurance. In order to have a level premium, enough more than the amount needed for current death losses is collected during the first years of insurance to bear the burden of later years when losses exceed the premium income.

This excess premium is known as the "reserve." Because the laws of the several states require life insurance companies to accumulate reserves, the excess amount when calculated on the basis prescribed by law is called the "legal reserve." "Legal reserve" companies are also referred to as "old line" companies. The reserve liability to the company's policyholders is the major liability in the balance sheets of these companies.

**Interest and the premium.** Interest will be earned on the reserve funds, and will serve to swell the reserve. It would be more nearly correct to say that the interest reduces the amount that it is necessary to collect for a reserve, because in the calculation of the premium this second factor, the interest earnings, is allowed for. The premium rate is correspondingly lowered. The insurance law provides the maximum interest rate that a life insurance company may assume in its calculations. The restriction is designed to prevent an over-optimistic forecast and a consequently inadequate premium rate. In view of the long period for which life insurance must run, such regulations are essential for the protection of policyholders. In New York State, the maximum rate of interest that a company may assume is 3 per cent on policies issued after January 1, 1948. If a company assumed a higher interest rate, as was formerly the case with some companies, a smaller reserve was accumulated during the early years of the policy.<sup>2</sup> Some companies have adopted a 2½ per cent rate and even less.

<sup>2</sup> The Insurance Law of New York, Chapter 882, Laws of 1939, Section 205 as amended to 1952 provides as legal minimum standards: (a) the Actuaries' Table and 4 per cent interest for policies issued before 1901, (b) the American

**Loading.** The calculation based on the mortality table and on an assumed interest rate to be earned on the reserve is the work of the actuary, and gives us what is known as the "net level premium." To it must be added an amount sufficient to cover the expenses of operation, which amount is called "loading." The net premium plus the loading is the premium rate quoted to the purchaser of life insurance.

If the premium were calculated in exactly the manner outlined, the loading for the first year would be inadequate to meet the heavy expenses that are incurred at that time. In order to permit the use of a larger amount of this first premium for expenses, some life insurance companies have reduced the reserve requirement to less than it would be under the strict full level premium reserve basis. This modification was more common in the past than recently. Three modifications employed are known as (1) the select and ultimate method, (2) the modified preliminary term method, and (3) the full preliminary term method. When any one of these methods is used, the resulting reserve liability is reduced during the early years of the policy's existence. The sizes of the reserves resulting from these methods rank (from largest to smallest) in the order in which the methods are named. When the reserve standard of the level premium method is to be lessened, the select and ultimate modification is regarded as the most scientific and satisfactory. Under this method, the below-average death losses among the newly admitted policy-holders, who are required to pass a medical examination and are consequently a *select* group, are noted; the savings from this source are used for expenses, and the strict reserve requirement of the level premium method is put into effect after the fifth year of insurance. Which modification is employed, however, is of relatively secondary importance in a general comparison of companies such as is outlined here.<sup>3</sup>

Experience Table and 3½ per cent for policies issued subsequently, (c) the American Men Ultimate Table and 3½ per cent interest for policies issued after 1929, and (d) the Commissioners' 1941 Standard Ordinary Mortality Table and 3 per cent interest for policies issued after 1947. Other standards are specified for supplementary contracts, annuity, group, and industrial policies.

<sup>3</sup> An extended discussion of these methods will be found in R. Riegel and J. S. Miller, *Insurance Principles and Practices* (New York: Prentice-Hall, Inc., 3rd ed., 1947), pp. 171-174, and in Henry T. Owen, *Fundamentals of Life Insurance* (New York: Prentice-Hall, Inc., 1951), pp. 86-96. *Best's Life Insurance*

**Dividends and net cost.** Mortality may be less than that allowed for by the table; interest may be earned in excess of the assumed rate; and the loading may prove to be more than is needed. Such savings one would expect to benefit the stockholders. As a matter of fact, the bulk of life insurance in this country is sold by mutual companies. The result is that the savings from these sources are returned to policyholders as "dividends." Even some of the stock companies issue participating policies, which provide for dividends to policyholders.

The net cost of the insurance is the premium paid less these dividend refunds. The net cost provides the usual basis for comparing the policies of different companies to determine their relative merits. The method is open to three possible objections: (1) a particular type of policy of a given company may be favored with more liberal dividends than other types issued by the same company, and it is necessary, in all fairness, to compare all kinds of policies of the two companies under study; (2) again, the future may differ from the past experience, and the company with the poorer *net cost* showing at present may be gathering strength that will reverse the situation; (3) finally, those companies which assume a low interest rate, say  $2\frac{1}{2}$  instead of 3 per cent, in computing their reserve will find it necessary to set aside larger sums in the earlier years of the life of the policy. The result will be an apparently higher *net cost*, which will be balanced by a higher reserve accumulation. In later years, this greater accumulation will provide greater interest income, and so should give a lower *net cost* in those years. To allow for the greater reserve of some companies, *net cost* is also computed on the net figure obtained by subtracting the final reserve, or cash surrender value, from total premiums less dividends paid during the period and regarding only the remainder as cost. This more refined approach is open to the objection that it gives the large reserve company the benefit of the interest it can earn on the extra reserve and ignores what the policyholder could earn on the money he would not have paid in to the low reserve company. Net cost calculations, in spite of objections, are a useful first step in studying life insurance cost but should be

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*Reports characterize reserves on these four bases: "strongest," "strong," "minimum safe and adequate basis in general use," and "minimum permitted by law," respectively.*

supplemented to insure fairness. In the long run, low mortality, low expenses, and high investment returns will bring the lowest net cost.

**Gain and Loss Exhibit.** Prior to 1939, the gain and loss exhibit summarized the net gains and losses in surplus, by comparing actual income or expense with the respective parts of the premiums and reserves that had been actuarially allocated to those particular items. Thus, (1) the gain from mortality represented the excess of that portion of the premium (and reserves) set up for death losses with actual payments on account of death; (2) the gain from interest reflected the excess of earnings on investments over the amount of interest assumed in constructing the premium rate; and (3) gain or loss from loading showed the amount by which operating expenses fell short of or exceeded the loading in the premiums. Other less significant gains and losses arose from such sources as supplementary contracts for disability and accidental death benefits, the surrender or lapse of policies, and annuities. From the earlier discussion, it is clear that a company would show greater gains than similarly efficient companies if it charged higher premiums because of its assumption of a high mortality experience table, a lower interest rate, or heavier expense loading.

Because of the widespread feeling that differences in mortality, interest rate, and loading assumptions in the construction of premium rates, and differences in the character of business written made for unfair comparisons under this form of gain and loss exhibit, a changed form was adopted in 1939. This form is illustrated in the 1950 Gain and Loss Exhibit of the Metropolitan Life Insurance Company of New York shown on page 513.<sup>4</sup>

The percentages are chiefly useful in making it easier to see the proportions among the various items. There are no standard or ideal relations and the proportions would naturally vary greatly from company to company. In fact, instead of comparing the expense items with the gross income, the amounts set aside for reserves should first be deducted (and they bear a most variable relation to gross income) as only the balance is actually available for payments to policyholders, such as insurance benefits and maturities, and for expenses of operation. Previous discussion and certain points made below ex-

<sup>4</sup> *Spectator Insurance Year Book, Life, 1951*, p. 493A.

plain why a variable proportion of the total income is set aside for reserves, used for losses, and spent as expenses.

The net gain from insurance is explained so that the reader can see from what classes of policies it is derived. Losses are most frequently incurred on the disability and annuity contracts. The net gain is not a true profit nor a measure of efficiency, because different companies with like efficiency may have based their premiums on different assumptions as to mortality, interest rates, and loading. The net gain does indicate the margin of excess income that makes it possible for the company to bear adverse mortality or reduced investment income in later years without draining surplus and moving toward insolvency.

After the net gain from insurance appear the irregular and non-recurring gains and losses, such as profits from the sale or redemption of bonds, losses on foreclosed mortgages or real estate sold, or readjustment of the book value of assets as required by law. Finally, there appear any distributions, either to policyholders or stockholders.

**Standards and comparisons.** Since the change to the present form of gain and loss exhibit, the reader cannot tell how much of the gain is due to mortality savings over the assumed standard on which premiums are based. He will note, however, what mortality tables are employed. To the extent that the newer Commissioners' Table has come into use because of new business instead of the older American Experience Table, it will be expected that mortality gains will be smaller. If, however, two companies applied the same tables, a new or rapidly growing company should make a favorable showing on the score of mortality.<sup>5</sup> Those policyholders who have just passed a medical examination are a freshly selected group, and will tend to show a relatively low mortality even if they are none too well selected.

Performance on investment policy can still be checked satisfactorily. The general measure is the net rate of return earned on the mean (average) admitted assets. The problem is then broken down

<sup>5</sup> Stressing the varying accuracy of the *American Experience Table* as a measure of present-day mortality of life insurance policyholders, *Best's* states: "On the same business the mortality rate will run from about 25 per cent at the younger ages to over 100 per cent at age 65 and then down again to about 90 per cent." *Best's Life Insurance Reports*, 1951, p. xvii.

**GAIN AND LOSS EXHIBIT**  
**METROPOLITAN LIFE INSURANCE COMPANY OF NEW YORK**  
**FOR YEAR ENDING DECEMBER 31, 1950**

	\$	Per Cent
Premiums and Other Considerations . . . . .	1,420,204.508	78.7
Dividend Accumulation and Supplementary Contracts without Life Contingencies . . . . .	88,352,739	4.9
Investment Income (Less Investment Expenses including Taxes) . . . . .	296,154,669	16.4
Other Income . . . . .	179,431	.0
<b>Total Income (A)</b> . . . . .	<b>1,804,891.347</b>	<b>100.0</b>
<b>DISBURSEMENTS:</b>		
Deaths . . . . .	289,119.557	16.0
Maturities, Disabilities, Annuities . . . . .	270,497,000	15.0
Surrenders . . . . .	114,844,357	6.4
Dividend Accumulation and Supplementary Contracts without Life Contingencies . . . . .	71,766,485*	4.0
Commissions, Taxes, and Other Insurance Expenses . . . . .	268,872,130	14.9
Other Disbursements . . . . .	3,137,256	.2
<b>Total Disbursements (B)</b> . . . . .	<b>1,018,236,785</b>	<b>56.4</b>
Increase in reserves on Contracts Involving Life Contingencies . . . . .	494,050,985	27.4
Increase in Reserve for Dividend Accumulation and Supplementary Contracts without Life Contingencies . . . . .	43,676,816	2.4
Increase in Other Reserves and Assets not Admitted . . . . .	15,255,623	.8
<b>Total Increase in Reserves (C)</b> . . . . .	<b>552,983,424</b>	<b>30.6</b>
<b>NET GAIN FROM INSURANCE:</b>		
Industrial . . . . .	58,358,244	3.2
Life . . . . .	103,735,353	5.7
Total and Permanent Disability . . . . .	—313,312	—.0
Accidental Death Benefits . . . . .	4,033,643	.2
Annuities (Excluding Disability Annuities) . . . . .	—162,070	—.0
Supplementary Contracts . . . . .	—489,422	—.0
Group Life and Group Annuities . . . . .	48,540,292	2.7
Accident and Health . . . . .	19,968,410	1.1
<b>Total Gain from Insurance (A — B — C)</b> . . . . .	<b>233,671,138</b>	<b>12.9</b>
<b>INVESTMENTS:</b>		
Net Profit on Sale or Maturity . . . . .	8,281,335	
Increase by Adjustment in Book Value (Net) . . . . .	7,154,031	
Gain, Change in Difference between Book and Admitted Values . . . . .	19,428,247	
Gain, Other Investment Items . . . . .	11,357,891	
Net Profit from Investments . . . . .	46,221,504	
Net Gain from Underwriting and Investments . . . . .	279,892,642	
Dividends to Policyholders . . . . .	185,595,862	
Dividends to Stockholders . . . . .	59,844,887	
Increase in General Contingency Reserve . . . . .	2,095,059	
Loss from Miscellaneous Items . . . . .	247,535,808	
<b>Total Net Loss from Miscellaneous Items</b> . . . . .	<b>32,356,834</b>	
<b>Increase in Surplus during 1950</b> . . . . .	<b>32,356,834</b>	

Includes \$8,276,204 Health and Welfare Work for Policyholders.

and the rate of return studied for the particular assets: bonds, mortgages, real estate, and policy loans.

Operating expenses might be compared with the total premium income. However, three major objections to this crude ratio are that it fails to take account of: (1) differences in the proportions of old and new business, (2) necessary differences in the expensiveness of doing different kinds of business, and (3) differences in the manner in which the premium rates used as a base are constructed.

The first objection arises from the fact that the proportion of expense is by far the heaviest during the first year of the policy, because of the salesman's commission, medical examination, and cost of issuing the policy. The expenses of a company doing a large amount of new business in proportion to the business it already carries would tend to be a relatively high per cent of the premium income.

Where the question is raised as to whether a given company is unduly handicapped, in a comparison of its expense ratio with the ratios of other companies, because of its high proportion of new business, the three following ratios are available as a check:

1. First-Year Commissions to New Premiums.
2. Total First-Year Expense to New Premiums.
3. Renewal Expenses to Renewal Premiums.

Ratios one and two show what proportion of new, or first-year, premiums are absorbed by commissions and by all first-year expenses, respectively. The third ratio states the proportion of renewal expenses to renewal premiums. Some companies pay relatively high commissions on the initial premium and relatively low commissions on renewals, while others show less disparity between the two. These three ratios are more useful as a check upon than as a substitute for the ratio of total expenses to total premiums.

The second objection lies in the difference in the per cent of loading or expense necessary for premiums of different types of policies of a given company. A twenty-year endowment insurance for \$1,000 might have a premium of \$52 per year; an ordinary life \$24 per year for \$1,000. Although the commission will be a higher amount on the former policy, it will be a lower per cent of the premium. So important is the commission as a part of the expense that a company that wrote a very heavy proportion of its business in endow-

ment insurance would be expected to show a decidedly lower expense ratio than one that wrote chiefly ordinary life or term policies.

The third objection is that the ratio is unfair, because it uses as its base the premium rate. As a consequence, high premiums make the expense ratio appear low, and *vice versa*. Some companies will have premium rates very closely alike, while others will show considerable variation. The objection is significant only in the case of the latter. Rate differences are particularly important between participating and nonparticipating policies. The rates on the latter class of business are set considerably lower, because the policy does not participate in any of the savings of the company, receiving no dividends.

Another method of allowing for varying proportions of new and old business in studying the expenses is offered in *Best's Life Insurance Reports*. Five times the new insurance written during the year is added to the total insurance in force at the end of the previous year. The total is divided into total expenses. A subsidiary adjustment is made by adding one tenth of the variation in the average premium on all business below \$30 per thousand or subtracting 5 per cent for any excess of the average premium over \$30 per thousand. The resulting expense ratio is then stated as so many dollars per \$1,000 of old insurance. The principle has been used by various authorities but with a varying ratio for the expense of new to that of established business. In order to give comparability, any industrial and group insurance should be separated from the ordinary insurance business. The expenses of the industrial policies are higher and those of the group policies lower than for the ordinary business. Should the annuity business grow in importance and fail to be separated, another source of confusion might arise, because the ratio of expense to premiums on such contracts is very low, especially where low-expense group contracts are written.

In a study of a company's expenses, then, the first consideration to be made is an allowance for the youth of the company and the proportion of its income that represents new business. The second consideration is the relative distribution of policies between high-premium classes (such as a twenty-year endowment) and low-premium classes (ordinary life). The third consideration, the difference in premium rates, when used as a base for the expense ratios, may be allowed for if a comparison of rates for typical policies of the

companies being studied reveals sufficient differences. If such differences exist, the application of the expense ratios to the rates charged will quickly show the actual amounts that the policyholders are contributing for overhead per unit of insurance.

Some other ratios that are often used in order to understand the company better are (1) the average premium; (2) the average policy; (3) the average of new policies written; (4) the average of policies lapsed or surrendered to average total insurance; (5) average life reserve per \$1,000 of insurance; and (6) the ratio of surplus, or net worth, to life reserves.

**Life insurance assets.** The balance sheet is based upon the so-called admitted assets; that is, assets that are admitted by the state supervisory authorities in testing solvency. These include what are sometimes called "nonledger assets," which refers to the accruals, such as accrued interest or other investment income and uncollected and deferred premiums. When less than the full annual premium is received, the unpaid portion of the premium is regarded as an asset under this heading. Such treatment is necessary, because the reserves are calculated on the assumption that the full premium is received.

Sometimes the nonadmitted assets are also reported. The insurance law will not permit the inclusion of certain amounts, such as "Agents' Debit Balances," "Overdue and Accrued Interest on Bonds in Default," and the book value of such assets as real estate and bonds when it is in excess of the figure authorized by the insurance department of the regulating state. If these nonadmitted items had not been separated and deducted, then the reader would find it necessary to rewrite the balance sheet making suitable deductions. The item of accrued interest on bonds in default is included in this group of deductions, and an examination of the detailed schedule of the company's investments will reveal the offending bonds. The item is not an unusual one, and shows how the most conservative investors suffer loss on occasion.

**Real estate.** The real estate includes three items: (1) any office buildings used to house the company's operations; and (2) real estate acquired in connection with defaulted mortgage loans, and, in recent years, property acquired for investment purposes. The first item should be small. Occasionally an overlarge, showy office building has been constructed at an excessive cost with an eye to its advertising value. On the other hand, some purchases have been

made advantageously in a distressed real estate market at bargain prices.

In the past, most of the real estate total was property acquired upon defaulted mortgage loans. Growth usually indicated acquisitions through foreclosure or agreement with an embarrassed debtor; and decreases, the sale or disposal of such realty. When so acquired, real estate is appraised; and if its value is less than the mortgage loan, the amount is written down.<sup>6</sup> A clue to the condition of this asset will be found in the investment exhibit, where gains and losses on real estate acquired in this manner are shown.

If the real estate item is substantial because of heavy mortgage foreclosures, it should be given close scrutiny. In addition to any statements on valuation methods, evidence will be sought as to maintenance. Total real estate expenses, including taxes, are not likely to run less than 4 per cent of value if adequate maintenance exists. More is frequently necessary when the property is first acquired in order to repair neglect. Profit or loss on property resold may provide a clue to the conservatism of valuations, although a conservative company may show no profit on real estate sold on a sales contract, preferring to treat the profit as uncertain and only realized as the payments are received, as in installment selling.

Investment in real estate is now permitted in limited amounts. It may represent large multifamily apartment buildings, which some of the larger life insurance companies have erected and own without mortgage encumbrance. The largest investments have been made in properties acquired from industrial and other businesses and then leased back to the seller for long periods. Such leases are typically made with responsible tenants of high credit and provide a stipulated fixed return plus enough to amortize the bulk or all of the property cost. The result is more akin in economic character to a loan than ordinary real estate with its fluctuating income and value.

<sup>6</sup> Desirable practice is indicated in the annual report of the Provident Mutual Life Insurance Company of Philadelphia for 1933: "The value of foreclosed real estate as carried in the balance sheet is not in excess of the face amount of the mortgages. All acquisition costs, including back taxes, are completely charged off. No overdue interest is capitalized. In addition, each piece of real estate is carefully reviewed at the end of each year and where the Company is not satisfied with the book value, it is charged down to a figure that is satisfactory. During the year 1933, the sum of \$627,000 was applied to reduce the book value of real estate and to write off foreclosure costs."

**Mortgage loans.** "Mortgage loans" is usually one of the largest assets. As made by life insurance companies and savings banks, mortgages are relatively safe investments. Although they require considerably more care and effort in selection than bonds and are not so easily converted into cash, they afford, however, an opportunity for a somewhat higher return. Insurance companies not only have found mortgage loans a most valuable investment field, but have also rendered a signal service to home builders and farmers by these investments.

Mortgages that have been insured by the F. H. A. (Federal Housing Administration) or Veterans' Administration will be separately shown. They are protected by their insurance, in spite of high percentages loaned and slow repayment rates. In the event of default, the lender is entitled to receive debentures that are guaranteed by the United States Government. Loss to the lender is limited to any foreclosure costs in excess of the permitted maximum. This amount could be important in states with cumbersome foreclosure procedures, such as New York and Illinois.

**Bonds.** Bonds, together with the mortgages, will normally make up the major part of the investments. The advantages of bond investments are already familiar. For a more detailed study of this asset, the schedule of "Bonds Owned" may be examined in the annual report, where the names of the bonds and the book, or amortized, value, the par value, and the market value of each block of bonds purchased and held by the reporting company at the date of the balance sheet are ordinarily stated. Stocks, because they are subject to greater fluctuations in value and greater risks, are regarded as suitable investments only in very limited amounts.<sup>7</sup>

Mortgages and bonds, and sometimes preferred stocks, are regarded as more suitable than common stocks for life insurance investments for two main reasons. In the first place, common stocks fluctuate in price more widely, not merely because of changes in interest rates and credit ratings, which affect long-term credit instruments as well, but also because of changes in earnings and divi-

<sup>7</sup> The first exceptions in the law were made to permit preferred stock investments. Permission to invest in common stocks came later. It is typically limited. Thus, in New York State the maximum permitted is 3 per cent of assets; other states permit as much as 5 to 10 per cent. Actual stockholdings of all life companies have run about 3 per cent of assets, of which about two thirds have been preferred and one third common.

dends. The liability of the insurance company to its policyholders is a fixed amount of dollars, and there is need of a certain income if the reserves required by the policy contracts are to be accumulated. In the second place, the surplus of assets over liabilities is so small generally that little leeway is left for losses such as are always potentially present in common stock holdings. Market price fluctuations for preferred and common stocks are shown in the balance sheet. They are ignored for investment quality bonds and mortgages.

The amortized value is the authorized value at which life insurance companies are generally allowed to carry bonds on their balance sheet, so that market values will in some years be higher and in others lower.<sup>8</sup> Authorized values for defaulted bonds and for stocks are ordinarily market values. In periods of unusual financial disturbance, this use of current market values may be suspended temporarily. These special valuation rules are, generally, those adopted by the National Association of Insurance Commissioners. The principles underlying these emergency rules apparently are:

1. A security is good until it is demonstrated to be bad--by default in the case of a bond, or receivership in the case of a stock.
2. Bonds not in default are to be carried, normally, at amortized value. Defaulted issues, like stocks, are to reflect market value to a more or less limited extent.
3. The valuation of stocks involves market quotations, but weight is given to cost and dividend yield.<sup>9</sup>

<sup>8</sup> From 1935 to 1939 inclusive, stocks were valued at market value and bonds not in default at amortized value. In 1940, the rule was stiffened so that bonds not in default may be amortized only if they are (a) Governments or legal municipals, (b) bonds rated in top four rating groups by two bond services, (c) rated in top five ratings by three services, (d) rated in top five ratings by two services and selling at 55 or higher during each of September, October, and November, 1940, or (e) bonds of less rating or unrated if proved to satisfy above requirements on basis of investment quality. The maximum value for mortgages in foreclosure was placed at unpaid balance plus one year's interest and taxes. Repossessed buildings must be depreciated at least 2 per cent per year.

<sup>9</sup> At the end of 1931 and 1932, the authorized values for stocks were market values as of June 30, 1931, which were found to be the approximate equivalent of average market prices for a range of five quarterly periods ending Sept. 30, 1931. At the end of 1933, the authorized figure was found by averaging the figure used in the preceding year with quotations of Nov. 1, 1933. However, if this figure was more than the amount obtained by capitalizing the aggregate dividend yield at a rate sufficient to maintain the reserves, this lower amount was to be used. For a more exact statement of the rules, see the introductory material in *Best's Life Insurance Reports* for each year.

The use of the "amortized value" figure may be illustrated by the case of the following investments:

		Book or Amortized Value	
	Par	Dec. 31, 1950	Dec. 31, 1951
Montana Power, 1st 2 1/8's, 1975	\$500,000	\$500,000	\$500,000
Public Service Electric & Gas, deb 6's, 1998	100,000	157,685	157,200
St. Louis Southwestern Railway, 1st 4's, 1989	100,000	80,764	80,926

The above bonds were entered on the books at cost when purchased, and, unless unusual circumstances arise, are likely to be held to maturity. Bonds acquired at par, such as those of the Montana Power Company, have no premium or discount to be amortized. The St. Louis Southwestern Railway bonds were purchased below par, and the discount, which will be realized in cash when the bond matures, is regarded as adding to the income each year. The amortized portion of the discount is added to the book value of the bond, so that at maturity the book or amortized value will be par; the proper proportion of the discount added to the book value is a part of the income from the bonds. The income from these last-named bonds during 1951 was as follows:

Interest Collected .....	\$4,000
Discount Amortized (\$80,926-\$80,764) .....	162
Total Return or Yield .....	<u><u>\$4.162</u></u>

The Public Service Electric & Gas 6's were purchased at a premium, and so the proper portion of the premium was written off during 1951. This amount, \$485, would reduce the net yield from \$6,000 (the amount of interest received) to \$5,515.

**Policy loans.** Loans on policies are a privilege which the policyholder has a right to demand under his policy contract. Inasmuch as the loan is not to exceed the amount of the cash surrender value, which is based on the legal reserve, it is completely safe. The company merely lends the policyholder from the reserve (that is, on the basis of company's own liability to him) on his own contract, which would otherwise be invested. Although such loans, by becoming a claim against the policy, reduce the protection that the policyholder has, they often keep the policy from being dropped, and have,

on some occasions, as in panic years, been a most welcome resource to the hard-pressed businessman.

The cash surrender value, which is the basis of the policy loan, is that portion of the accumulated legal reserve which the company pays to a policyholder when he surrenders his policy for cancellation. Because the reserve is an excess payment for future benefits to be obtained only by the continuance of the policy, the cash surrender value merely represents a fair means of settling with the policyholder who wishes to discontinue his insurance. From the company's point of view, policy loans have the advantage of giving a good rate of return with no risk, but a high proportion to total assets is looked upon with disfavor because borrowing is likely to lead to the lapse of policies and so a loss of business.

**Cash.** Cash will be stated in two amounts, the interest-bearing and non-interest-bearing balances being given separately. Because interest is rare nowadays on bank balances, an overlarge cash indicates a wasteful investment policy.

#### ASSET PROPORTIONS AND TOTAL ASSETS OF ALL UNITED STATES LEGAL RESERVE LIFE INSURANCE COMPANIES

As of December 31

Per Cent

	1920	1930	1940	1945	1950
Bonds . . . . .	49.0	33.6	55.1	72.8	61.4
Stocks . . . . .	.7	2.5	1.8	2.2	3.3
Mortgages . . . . .	29.7	40.1	19.3	14.8	25.2
Real Estate Owned . . . . .	2.3	2.9	6.7	1.9	2.3
Policy Loans . . . . .	11.7	14.9	10.1	4.4	3.7
Cash . . . . .	1.7	.8	3.4	1.8	1.6
Deferred & Unpaid Premiums . . .	1.8	2.3	1.6	1.4	1.6
All Other Assets . . . . .	3.1	2.9	2.0	.7	.9
Total . . . . .	100.0	100.0	100.0	100.0	100.0
Total Admitted Assets . . . . . (in Millions)	\$7,320	\$18,880	\$30,802	\$44,797	\$64,020

Source: *Spectator Insurance Year Books*.

**Asset distribution.** The manner in which the funds of life insurance companies are almost completely invested is revealed in the accompanying percentage distribution statement of the assets of United States companies. The mortgages and bonds are the bulk of the total. In times of distress, policy loans, and likewise real estate, increase, the former reflecting the needs of policyholders to borrow

on the reserves of their policies, and the latter the acquisition of property from distressed borrowers on mortgages.<sup>10</sup>

The influence of the times upon the investment portfolio is also illustrated in the detailed table on portfolios shown below.<sup>11</sup> The kind of bonds—railroad, utility, or civil—which are added in any given year will be found to reflect the changes in the supply of new high-grade investment opportunities. The most extreme changes are found in the rise in holdings of United States Government obligations between 1930 and 1945. Both absolute and relative shrinkage occurred during the business boom between 1945 and 1950. Utility and industrial bonds grew in importance over this period, while railroad issues remained static in amount and decreased in relative importance, dropping from 15 to 5 per cent of asset in the two decades. Mortgage holdings grew tremendously between 1945 and 1950 and rose from 15 to 25 per cent of assets, a relative position that fell short of the 40 per cent reached at the end of the building boom of the 1920's.

**Reserves.** The layman in turning to the liability side of the balance sheet is likely to feel confused at the multiplicity of headings. Where the term "present value" is given, it indicates the presence of the reserves mentioned above in the discussion of the construction of premium rates. The various headings show reserve liabilities calculated on bases varying slightly because of the issuance of policies at different periods, when different interest rates and mortality tables were employed in computing the reserves. This type of liability

<sup>10</sup> The following excerpt from the 1932 annual report of the Northwestern Mutual Life Insurance Company relative to its mortgage experience is of interest: "The history of your Company's investments in these mortgages, during the past 75 years, includes several periods of severe economic depression, notably those of 1873-1879 and 1893-1899. The lessons learned during those periods resulted in the establishment of such conservative rules governing the Company's investment practice that the severe depreciation in real estate now existing has been largely discounted in advance. Such ultimate losses as may occur should be confined mainly to interest... On Jan. 1, 1929, the foreclosed real property owned... amounted to 255% of the total admitted assets... land on Dec. 31, 1932, to 1437% of the admitted assets or less than \$15.00 per \$1,000 of such assets.... The book value of the farm properties and the improvements thereon at appraised current prices, now owned by your Company, averages only \$37.63 per acre."

<sup>11</sup> Compiled from *Life Insurance Fact Book and Proceedings of Life Insurance Association of America*.

is also shown for annuities and supplementary contracts, such as the accidental death benefit that some life insurance companies add to their policy.

CLASSES OF BONDS, STOCKS, AND MORTGAGES HELD BY  
ALL LIFE INSURANCE COMPANIES IN THE UNITED STATES

	(Billions of Dollars)					(Per Cent)			
	1930*	1940*	1945	1950		1930**	1940*	1945	1950
<b>Bonds:</b>									
United States Government	3	5.9	20.6	13.4		1.8	19.0	45.9	21.0
State and Municipal	1.0	2.4	.7	1.5		5.4	7.7	1.6	2.4
Canadian Government	.1	.1	1.2	1.1		6	4	2.6	1.7
Total Government	1.4	8.4	22.5	16.0		7.8	27.1	50.1	25.1
Public Utility		1.6	4.3	5.2	10.6	8.6	13.8	11.6	16.5
Railroad		2.9	2.8	2.9	3.2	15.4	9.2	6.6	5.0
Industrial & Miscellaneous	4	1.5	1.9	9.5		1.9	5.0	4.3	14.9
Total Bonds	6.3	17.0	32.6	39.3		33.7	55.1	72.6	61.5
<b>Stocks:</b>									
Railroad		—	—	.1	.1	—	—	.2	.2
Public Utility		—	—	.3	7	—	—	.6	1.1
Other		—	—	.6	1.3	—	—	1.4	2.0
Total Stocks	.5	.5	1.0	2.1		2.4	1.8	2.2	3.3
<b>Mortgages:</b>									
Farm		21	.9	.8	13	11.2	2.9	1.7	2.2
Other		5.5	5.1	5.9	14.8	29.0	16.4	13.1	23.0
Total Mortgages		7.6	6.0	6.6	16.1	40.1	19.3	14.8	25.2
Other Assets	4.4	7.4	4.6	6.4		23.8	23.8	10.2	10.0
Total Admitted Assets	18.9	30.8	44.8	64.0	100.0	100.0	190.0	100.0	100.0

\* 1930 and 1940 figures for leading companies representing about 92 per cent of total assets.

**Current liabilities.** A number of liability items showing claims in the process of adjustment and payment follow. There will also be accrued and unpaid salaries, fees, and taxes. These items—not including the reserves—together with some of the dividend appropriations, might be called the current liabilities of the company. Most of the dividend appropriations are paid annually; but there are some companies, mostly those with old policies still outstanding, which provide for "deferred dividends." "Deferred dividend" policies have also been called *semitontine*, *accumulation*, and *ten-, fifteen-*,

or *twenty-year distribution policies*. The present insurance laws in the more important states require that policies provide for the annual distribution of surplus. The New York law (as amended to 1952, Section 216) provides:

... After setting aside from such surplus (that is, surplus earned during the past year) such sums as may be required for the payment of authorized dividends upon the capital stock, if any; such sums as may properly be held for account of existing deferred dividend policies, if any; and such sums as may be deemed advisable for the accumulation of a surplus not in excess of the maximum prescribed in this chapter, every such company shall thereupon apportion the remainder of such earnings, if any, derived from participating policies and contracts, equitably to all policies and contracts entitled to share therein during the full dividend year adopted by the company for such purpose....

The maximum undistributed surplus permitted under the New York law (Section 207) is fixed at 10 per cent of a mutual company's policy reserves and policy liabilities or \$750,000, whichever is greater. A stock company doing an exclusively nonparticipating business is exempt from this provision.

**Surplus as to policyholders.** If a company is a stock company, the remainder of the liability side of the balance sheet will be represented by capital stock and surplus; if a mutual company, by surplus. The surplus may be designated as "unassigned funds," or may be shown under various headings that indicate the purpose for which it is held. Thus, in one case, it is shown as: "Contingency Reserve Funds, \$—; Dividend Equalization Fund, \$—; Security Fluctuation and Real Estate Depreciation Fund, \$—." For medium and large companies, the total surplus, or stock and surplus, will ordinarily range between 5 and 10 per cent of the liabilities. This "surplus to policyholders" should be studied for a period of years so that the trend may be noted. When taken in connection with the loss and gain statement, it indicates whether the dividend policy is likely to be in need of revision.

**Balance sheet comparison.** The accompanying statements may be taken as illustrating the two different types of management of two companies, which will be called *A* and *B*. The percentages indicate the proportion the given type of asset or liability is of the total assets or total liabilities.

In view of what has been said in regard to investments, it is apparent that Company *B* is in a superior position. The real estate

DECEMBER 31, 1931

	A	Per Cent	B	Per Cent
<i>Assets</i>				
Real Estate .....	\$1,800,000	36.7	\$ 670,000	1.0
Mortgage Loans .....	650,000	13.3	28,420,000	40.5
Bonds .....	1,030,000	21.0	24,860,000	35.5
Policy Loans .....	1,160,000	23.6	11,900,000	17.0
Collateral Loans .....			1,200,000	1.7
Premiums Due and Deferred .....	80,000	1.6	1,300,000	1.8
Accrued Interest on Bonds .....	20,000	.4	1,300,000	1.8
Cash .....	80,000	1.6	500,000	.7
Other Assets* .....	90,000	1.8	5,000	
	<u>\$4,910,000</u>	<u>100.0</u>	<u>\$70,155,000</u>	<u>100.0</u>
<i>Liabilities and Surplus</i>				
Net Reserves .....	\$4,620,000	94.1	\$62,150,000	88.6
Reserves (supplementary contracts) .....	70,000	1.4	1,500,000	2.1
Claims .....	80,000	1.6	300,000	.4
Dividend Appropriations .....	30,000	6	2,600,000	3.7
Other Liabilities .....	10,000	2	400,000	.6
Surplus to Policyholders .....	100,000	2.1	3,205,000	4.6
	<u>\$4,910,000</u>	<u>100.0</u>	<u>\$70,155,000</u>	<u>100.0</u>

\* The actual report also shows the amount of interest due and accrued on bonds in default, which is omitted here.

of that company is relatively small and the investment in mortgage loans very large; mortgages and bonds make up three fourths of the assets, and the cash has been kept to a low percentage. In one year, Company A earned as follows:

Assets	Per Cent*
Real Estate .....	2.6
Mortgage Loans .....	5.0
Bonds .....	4.3
Policy Loans .....	4.8
Cash .....	2.9

So large a proportion of the assets was in real estate that the average rate of return on the earning assets was but 3.8 per cent. An examination of the two companies' figures shows the following results for the year ending December 31, 1931:

	Company A Per Cent	Company B Per Cent
Ratio of Actual to Expected Mortality .....	98	64
Net Return on Investments .....	4.0	4.6
Per Cent of Premium Income Spent for Expenses .....	23	18

The comparison explains clearly why Company *B*'s policies showed a lower net cost than those of the other.<sup>12</sup> Although general comments on surplus are likely to be misleading, it is worth noting that the surplus to policyholders is 4.6 per cent for *B* as compared with 2.1 per cent for *A*.

**Fraternal insurance.** Years ago, it was felt that reserves represented "unjust overcharges." The prejudice was fostered by frequent cases of mismanagement in the use and investment of the reserve funds. Fraternal societies entered the field in competition with the regular companies and set rates that were, in the majority of cases, inadequate. With the passage of time, the average age of their membership advanced and the inadequacy of the original rates became evident. The more nearly adequate the rate was, the longer was the period before the condition became apparent.

The various states have gradually come to require that the fraternal societies compute what is the equivalent of the legal reserve liability.<sup>13</sup> The assets should be sufficient to equal this amount plus any other liabilities. Although the law sometimes stated that the valuation was not to be considered as "a test of the financial solvency of the society," any organization which showed a deficiency had to increase its assessments or accumulate surplus from operations. Under the laws of some states, all societies must reserve the right to levy additional assessments in addition to their regular "rate."

Some societies adopted the plan of raising their assessments, and others segregated their old members and started all new members in a separate group by themselves on a higher scale of assessments. With the adoption of the standards of regular legal reserve life insurance, any society unable to present a suitable balance sheet and other supplementary figures on operations should be regarded with

<sup>12</sup> Net cost (that is, premium less dividend) for typical policies, may be ascertained in some states from the annual report of the Insurance Department. For more ready reference, see *Flitcraft's Compend* (New York: Flitcraft, Inc.), an annual handbook devoted to rates, dividends, surrender values, and similar data of the various life insurance companies. Best's analyses furnish similar information.

<sup>13</sup> Insurance Law of New York (Section 470) requires for all contracts issued before 1939: "The legal minimum standard of valuation for all certificates... shall be the *National Fraternal Congress Table of Mortality*, or a table based on the society's own experience of at least 20 years, and covering not less than 100,000 lives, with interest assumption not more than 4 per cent per annum" Subsequent contracts have had to be based on one of the tables used by the ordinary life companies and a maximum interest rate of 3½ per cent.

skepticism. Their reports are usually found in the same sources as those of the ordinary companies. Their figures are not strictly comparable in all cases because many use different mortality tables and interest rate assumptions.

**Property insurance.** In the purchase of property insurance, the first requirement is safety. Although faith in the companies as a whole is justified by their record, it is well to check over the financial position of a company, as well as to learn whether it has a satisfactory record for fair and prompt settlement of losses.

Of the various kinds of insurance companies protecting one from loss of property, fire insurance is the most important. There are many other kinds, such as automobile, burglary, public liability, credit, plate glass, sprinkler leakage, and workmen's compensation. These various kinds of insurance, other than fire and marine, are known as casualty lines. Sometimes they are written by the companies that write fire insurance. The life insurance business must be handled by a separate corporation. From the standpoint of statement analysis, these various types of insurance other than life insurance are similar. They are regarded as taking a uniform risk throughout the life of the policy, whereas in life insurance the risk increases with advancing age.

**Illustrative balance sheets.** The accompanying composite picture of the financial condition of stock and of the mutual fire insurance companies will serve to illustrate the following discussion.

**Liquid assets.** An examination of the assets in these two balance sheets discloses much greater liquidity than would be shown by the assets of the life insurance companies. In both the stock and mutual fire statements, the proportion of mortgage loans is relatively small. A statement by F. J. Cox, President of the National Association of Insurance Agents, gives the reason. This statement was made in a circular letter to the members of the association at a time when there was agitation to force the companies to invest in mortgages and to aid construction to relieve a housing shortage. He said:

While doubtless many fire insurance companies would welcome the opportunity to invest some of their funds in mortgage loans on real estate, the very nature of fire underwriting requires assets of a more liquid character, so that, in cases of catastrophe, such as the San Francisco conflagration of 1906, which called for the payment of over \$200,000,000 to policyholders, their money will be instantly available to meet housing situations infinitely more pressing than any obtaining in this country today.

**STOCK FIRE AND MARINE INSURANCE COMPANIES**

**COMBINED BALANCE SHEETS**

As of December 31, 1950

<i>Admitted Assets</i>	<i>Per Cent</i>
Real Estate . . . . .	\$ 64,550,653 1.0
Mortgages . . . . .	23,216,344 0.4
U. S. Government Bonds . . . . .	2,147,105,107 34.8
Other Bonds . . . . .	689,696,825 11.1
Stocks . . . . .	2,258,329,058 36.8
Cash . . . . .	544,416,630 8.8
Premium Balances . . . . .	343,128,021 5.6
Other Assets . . . . .	107,859,761 1.7
Total Admitted Assets . . . . .	<u>\$6,178,302,399</u> <u>100.0</u>
<i>Liabilities</i>	
Losses and Adjustment Expenses . . . . .	\$ 600,129,505 9.7
Unearned Premiums . . . . .	2,453,381,124 39.7
Other Liabilities . . . . .	323,047,835 5.2
Contingency and Special Reserves . . . . .	41,593,119 .7
Total Liabilities . . . . .	<u>\$3,418,151,583</u> <u>55.3</u>
Capital Paid-Up . . . . .	474,178,610 7.7
Net Surplus . . . . .	2,071,652,073 33.5
Voluntary Reserves . . . . .	214,320,133 3.5
Policyholders' Surplus . . . . .	<u>\$2,760,150,816</u> <u>44.7</u>
Total . . . . .	<u>\$6,178,302,399</u> <u>100.0</u>

**MUTUAL FIRE INSURANCE COMPANIES**

**COMBINED BALANCE SHEETS**

As of December 31, 1950

<i>Admitted Assets</i>	<i>Per Cent</i>
Real Estate . . . . .	\$ 15,480,961 1.7
Mortgages . . . . .	15,306,598 1.7
U. S. Government Bonds . . . . .	420,623,385 46.3
Other Bonds . . . . .	159,435,314 17.5
Common Stocks . . . . .	126,296,641 13.9
Preferred Stocks . . . . .	33,257,996 3.7
Cash . . . . .	90,295,926 9.9
Premium Balances . . . . .	37,083,099 4.1
Other Assets . . . . .	11,055,341 1.2
Total Admitted Assets . . . . .	<u>\$ 908,835,261</u> <u>100.0</u>
<i>Liabilities</i>	
Losses Unpaid . . . . .	\$ 70,166,993 7.7
Unearned Premiums . . . . .	365,157,568 40.2
Other Liabilities* . . . . .	• 51,609,126 5.7
Total Liabilities . . . . .	<u>\$ 486,933,687</u> <u>53.6</u>
Guaranty Funds . . . . .	15,939,627
Surplus . . . . .	382,966,059
Voluntary Reserves . . . . .	22,995,888
Policyholders' Surplus . . . . .	<u>\$ 421,901,574</u> <u>46.4</u>
Total . . . . .	<u>\$ 908,835,261</u> <u>100.0</u>

\* Includes conditional reserve funds.

Source: *Best's Fire and Casualty Aggregates & Averages*.

Phrasing the matter more precisely, the investments of fire insurance companies are marketable rather than liquid. To be liquid, an asset should not only be convertible into cash on short notice—that is, marketable—but also should be free from large price fluctuations. Many fire insurance companies invest considerable sums in common stocks, which, although marketable, often being more readily salable than bonds of considerably greater safety, are nevertheless likely to fluctuate widely.

It is possible that a company may carry as high as 10 per cent of its assets in cash. Such a high proportion is in contrast to that carried by the life insurance company, for which 5 per cent would appear so large as to cause comment.

**Unearned premium reserve.** The largest amount on the liability side of the balance sheet is the amount of unearned premiums, which is sometimes spoken of as the *reinsurance reserve*. If a one-year policy has run for four months up to the date of the balance sheet, one third of the premium has been earned and two thirds is unearned. A liability equal to two thirds of the premium will consequently be shown. Except when a company has shown an unusually injudicious assumption of risks, it will be able to turn over its risks, such as the liability for the unexpired eight months on the above policy, to another company and reinsurance for an amount not greater than this unearned premium liability.

In a practical sense, the unearned premium liability is overstated, in that the calculation is based upon the entire premium charged (less reinsurance in case a part of the risk is reinsured in some other company), without any allowance for acquisition cost, management, and overhead expense—practically all of which is met at the time the policy is written. Thus, if on November 30 \$12,000 worth of premiums was received for one-year policies, then on December 31 the unearned premium liability would be \$11,000.

If it is assumed that 40 per cent of the premiums was used for commissions and other expenses, a partial statement of this business would appear with a deficit, even if no fire losses had occurred, as follows:

<i>Assets</i>	<i>Liabilities</i>	
Cash (or investments)	\$ 7,200	Unearned Premiums . . . .
Deficit .....	3,800	\$11,000
	\$11,000	

From an academic standpoint, the correct method would have been to subtract the loading from the premium income and take eleven twelfths of the remainder as the unearned premium liability. As a practical matter, the standard form of fire insurance policy so reads as to make the actual method of calculation the necessary method, because it provides that "when the policy is canceled by the company, it shall retain only the *pro rata* portion of the premium." The point made, however, as to the technical overstatement of liability is of importance when successive balance sheets of a company whose volume of business is changing considerably are being compared. A rapidly growing company would appear in an unfavorable light because of this factor.<sup>14</sup>

During a period of decreasing business, the fact that losses and expenses should be less than the unearned premium liability that is being wiped out should tend to improve the surplus position. The influence of this factor will be considered again later in the discussion of book value and earnings analysis.

**Policyholders' margin of safety.** After the total of this unearned premium liability and the debts of the company, there will appear the capital stock and the surplus. The surplus, or surplus plus capital stock, as the case may be, is the margin of safety for the policyholders, and is often spoken of as the "surplus as to policyholders." The combined balance sheets used above show the relative proportions of this surplus, or net worth, in the case of the stock and the mutual fire companies.

**Loss ratios.** To complete the study of a company, it is necessary to examine the earnings and expenses. The cash statement showing premiums written and expenses and losses paid is unsatisfactory. Ratios constructed from these figures are likely to be misleading, for

<sup>14</sup> Alfred M. Best has been quoted as follows: "One great company added in the year 1920 \$8,000,000 to its unearned premium liability, and reported in consequence an underwriting loss of about \$1,800,000. It had no choice under the law, but was obliged to make up its accounts on that basis, for which reason it would be absurd even to suggest that its officers were guilty of manipulation of its figures in order to conceal profits. Yet, the underwriting operations of that company, considered from the standpoint of the stockholders, were highly profitable during the year in question, because, as a practical business fact, the company under normal conditions, and, barring the possibility of a great conflagration, will never require anything like \$8,000,000 to meet the losses under the policies, the writing of which resulted in the \$8,000,000 increase of its unearned premium account." (*Journal of Commerce*, July 21, 1921).

receipts and disbursements are not necessarily the same as earnings and expenses. Although the report may give only the former data, one can usually calculate the actual premiums earned and the expenses and losses incurred; from these figures, the loss ratio and the percentage of the premium income absorbed by running expenses are obtained. Loss expenses that are incurred in the settlement of insurance losses, such as the cost of adjusters, are usually combined with the amounts actually paid to those insured in the computation of the loss ratio.

LOSS AND EXPENSE RATIOS FOR STOCK FIRE INSURANCE  
BUSINESS IN THE UNITED STATES 1929-1950<sup>15</sup>

	LOSSES INCURRED TO PREMIUMS EARNED Per Cent	EXPENSES TO PREMIUMS WRITTEN Per Cent
1929	49.0	44.1
1930	54.0	46.0
1931	52.5	46.9
1932	53.8	48.7
1933	41.0	47.9
1934	43.7	47.3
1935	40.4	47.9
1936	45.8	47.5
1937	45.9	46.4
1938	46.7	48.4
1939	46.8	47.6
1940	49.8	44.6
1941	53.3	42.3
1942	59.0	39.7 *
1943	52.1	42.3 *
1944	57.3	41.3 *
1945	58.1	41.5 *
1946	58.2	40.5 *
1947	58.5	39.2 *
1948	50.5	38.9 *
1949	44.7	38.4 *
1950	51.5	38.7 *

Expenses since 1942 are before Federal income tax.

The combined figures for fire losses incurred in the United States for all stock companies are shown in the preceding table as percentages of premiums earned. The influence of depression is seen in the rise of the loss ratio in the early 1930's.

<sup>15</sup> Best's Insurance Reports, Fire and Marine, 1951, p. vii.

Because so much of the expense is incurred at the time of the writing of the policies, it is common practice for analytical purposes to study the ratio of expenses to premiums written during the period. There has been a tendency for the expense ratio to rise over the past two decades. It has been due to reduced fire hazard and lower premiums rather than to inefficiency. The average premium per \$100 of insurance was \$1.05 in 1921, \$0.86 in 1930, and only \$0.67 in 1939.<sup>16</sup>

**Calculation of true earnings.** When a loss and gain statement is lacking and only the cash receipts and disbursements are reported, the earned premium income may be calculated with the aid of the balance sheets as follows:

Premiums Written During Year	\$ 4,351,000
Add Unearned Premium Liability Beginning of Year	12,355,000
Total	\$16,706,000
Deduct Unearned Premium Liability End of Year	6,232,000
Premium Income Earned During Year	\$10,474,000

The unearned premiums at the beginning of the year must be carried forward to help bear the losses of the current year, and so are added to the premiums that come in during the year. At the end of the year, whatever amount is unearned must be deducted and carried forward to bear the losses and expenses of the ensuing year.

Similarly, the figure for losses and expenses paid during the year can be used as a basis for learning the actual losses and expenses incurred. The method of finding expenses incurred would be to add the expenses paid during the year to the prepaid expenses and subtract the accrued expenses at the beginning of the year. From this amount, the prepaid expenses at the end of the year would be deducted and accrued expenses added. When the amounts of premiums earned and losses and expenses actually incurred are known, the operating section of the profit and loss statement is virtually reconstructed.

In addition to the profits from operations, if there are any, there will be the income from the investment of the company's funds. This other income explains why it is possible for many companies to operate profitably in spite of a narrow margin of operating profit.

<sup>16</sup> *Ibid., Fire and Marine, 1941*, p. xi. Data for recent years unavailable.

The major factor, however, that determines the profitableness of the fire insurance business in a given year is the loss ratio, sometimes known as the "burning ratio," which is the per cent of premium income consumed by fire losses. It is worth noting that in some lines of insurance the major portion of operating costs consists not of losses but of expenses, the former being relatively small. This situation is illustrated in the case of steam-boiler insurance, the loss from boiler explosion being relatively rare and the costs of regular inspection consuming the major portion of the premium.

BOSTON MANUFACTURERS' MUTUAL FIRE  
INSURANCE COMPANY

INCOME ACCOUNT

For the Year Ended December 31, 1950

Premiums Earned	\$12,198,425
Losses Incurred	82,722,427
Underwriting Expenses	1,645,735
	4,368,762
Net Underwriting Gain	\$ 7,830,263
Net Interest and Rents Earned	928,915
Realized Gains on Investments (Net)	38,209
Other Income	dr. 3,410
Total Income	\$ 8,793,977
Federal Income Tax	233,460
Net Income	\$ 8,560,517
Gain in Value of Investments (Net)	655,243
Total	\$ 9,215,760
Dividends to Policyholders	8,173,497
Balance	\$ 1,042,263

Very often such loss and gain statements for the factory mutuals show losses much smaller than the underwriting expenses. This condition is due to the methods of the manufacturers' mutual companies, which have developed high-grade inspection of factories and the compulsory removal of many fire hazards. These companies were originally organized by manufacturers who were obliged to pay prohibitive rates because of the extreme hazards incident to the unskillful construction and plan of operation of their plants. The ratio of losses and expenses to premiums is low, a characteristic of many mutual companies which charge more than similar commercial stock companies and then make a large refund in the form of a "dividend" at the end of the year. By conservative dividend policies, many

mutual companies have been able to accumulate surpluses which compare favorably with the net worth of the stock companies, as seen in our illustration above.

**Scientific rate-making.** Expenses can be estimated in advance with a fair degree of accuracy. Losses are a more difficult matter in spite of the skill applied to the problem. In the case of fire insurance premiums, the rates are calculated for the majority of the companies by a co-operative organization known as the Board of Fire Underwriters. The co-operation of companies through this board has led to the false charge that there is a monopoly in fire insurance. The careful investigation of risks by the "underwriters" makes possible a scientific rate; that is, a rate that is the result of a careful analysis of the various hazards to which a given property is exposed. The insured can find out the exact basis for his rate if he desires, and frequently can reduce this rate by eliminating some of the factors that increase the fire hazard.

**Moral hazard.** There are two types of hazard or risk so frequently mentioned that they must be understood in order fully to appreciate the profit and loss figures. They are moral hazard and conflagration hazard. Moral hazard is the risk that arises from the possibility of the insured himself causing a loss in order to collect insurance from the company. In the case of burglary or theft insurance, the insured might pretend a loss to recover from the company. When prices and property values decline, the fire insurance companies find that their loss ratio rises. The owner wishes to dispose of his property, and it occurs to him that his property has declined below the amount of his insurance. Inasmuch as the policy in most states protects only against the loss of the market value of the property at the time of fire, such an attempt on the part of the policyholder ordinarily requires not only arson but also the placing of a fraudulently high value on his property.

The high correlation between the fire loss ratio and business conditions, losses being low in prosperous years and high in depression years, indicates that a large part of the fires in the United States are the result of moral hazard.<sup>17</sup>

<sup>17</sup> A chart of the ratio of losses incurred to premiums written for the period 1860-1931 shows this vividly, and if the spread between losses in good and bad times can be attributed to willful burning, the moral hazard is extremely important. (*Annual Proceedings of the National Board of Fire Underwriters*, 1932). See table on page 531 above for recent data.

**Conflagration hazard.** The conflagration hazard is the risk of an unusually disastrous fire affecting an abnormal proportion of the company's policyholders. Any casualty that produces a loss of \$1,000,000 or more is regarded as a conflagration. The San Francisco disaster in 1906 was an unusually serious conflagration. The individual company can protect itself from this hazard only by carefully distributing its risks over a large area. It is the same principle of distributing risk that causes a company when it writes an unusually large policy or policies on a group of buildings in close proximity to reinsure a portion with other companies.

**Mutual fire insurance.** Although most fire insurance is sold by stock companies, the local mutual fire insurance company has succeeded by bringing together owners of dwellings and farm buildings who are acquainted. Such a situation has meant an unusually low moral hazard. If the dwellings are located so that they may be swept by a single fire, the company may eventually be bankrupted by a conflagration. The only mutual fire insurance companies besides the local mutuals that have had any considerable success in this country are the factory mutuals. The success of the latter, as has been stated, has been notable, owing to the strict enforcement of fire-prevention rules.

Generally, the purchaser of insurance can determine whether the rates quoted are too high by making comparisons between companies. An exception must be made for mutual companies. Those that are more conservative follow the practice of collecting an advance premium considerably in excess of the amount required to pay losses and expenses, thus providing against the need for an assessment in the event of unusual losses. The insured receives back the excess at the end of the year in the form of a "dividend," but because he has lost the use of the funds, an allowance for interest should be added to the net cost obtained by subtracting the dividends from the original premiums. Thus, a mutual charging a premium of \$100 might pay a 40 per cent dividend at the end of the year, making the nominal net cost \$60. But the use of \$40 has been lost for a period of a year, and if the use of the money is assumed to be worth 5 per cent, an addition of \$2 is necessary, making the true net cost \$62. It is essential, moreover, in choosing a company with a desirable premium rate, to select one which is financially sound. An analysis of the company's record should reveal:

**536 THE STATEMENTS OF INSURANCE COMPANIES**

1. What margin of safety has been provided in the way of a policyholders' surplus over the unearned premiums and other liabilities. The quality of the assets needs to be checked in order that it may be determined whether or not the surplus shown is authentic.
2. Whether premiums have been substantially sufficient to cover expenses and losses in the past. A small deficit need not be dangerous if surplus is adequate or if investment income is present to offset the underwriting loss.
3. Whether the company has had a sufficient experience to justify confidence in its management.

**Analysis by comparison.** If the company can satisfy on these points and can quote rates as low as or lower than its competitors, the prospective policyholder may be satisfied.

**PERCENTAGE COMBINED BALANCE SHEETS OF U. S. FIRE AND CASUALTY INSURANCE COMPANIES, 1950**

Assets	Fire and Marine		Casualty	
	Stock	Mutual	Stock (Percentages)	Mutual
Cash .....	8.8	9.9	9.4	8.7
Bonds:				
U. S. Government .....	34.8	46.3	44.5	52.6
Other .....	11.1	17.5	14.6	21.3
Stocks .....	36.8	17.6	21.0	7.2
Other Assets .....	8.7	8.7	10.5	10.2
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
<i>Liabilities and Surplus</i>				
Unpaid Losses .....	9.7	7.7	34.2	40.8
Unearned Premiums .....	<u>39.7</u>	<u>40.2</u>	<u>25.6</u>	<u>20.6</u>
Total .....	49.4	47.9	59.8	61.4
Other Liabilities .....	5.9	5.7	7.3	11.3
Total Liabilities .....	<u>55.3</u>	<u>53.6</u>	<u>67.1</u>	<u>72.7</u>
Net Worth (or Policyholders' Surplus) .....	<u>44.7</u>	<u>46.4</u>	<u>32.9</u>	<u>27.3</u>
Total .....	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Total Assets (Millions of Dollars) .....	6,178	909	4,425	1,473
Number of Companies .....	389	217	257	154

Percentage balance sheets provide a method for quick examination, such as a banker might find useful in making decisions as to the acceptability of insurance offered by borrowers on pledged property,

where the main concern is financial strength.<sup>18</sup> Such material would be a useful first step in surveying the companies but would need to be supplemented by more attention to detail and a thorough study of earnings and general tendencies.

Percentage balance sheets based upon the combined balance sheets of fire and casualty companies of both the stock and mutual types are arranged on the preceding page in comparative form.

The usual ratios given most emphasis for this type of study are:

1. Cash + Bonds to Loss Reserves + Unearned Premiums.
2. Cash + Government Bonds to Loss Reserves + Unearned Premiums
3. Cash + Bonds to All Liabilities (excludes Net Worth).
4. Policyholders' Surplus to Total Assets (or Liabilities and Surplus).

These four ratios for the various groups of insurance companies were as follows:

	<i>Fire and Marine</i>			<i>Casualty</i>
	<i>Stock</i>	<i>Mutual</i>	<i>Stock</i>	<i>Mutual</i>
1. Cash and Bonds to Loss and Unearned Premium Liability	1.11	1.54	1.15	1.35
2. Cash and Governments to Loss and Unearned Premium Liability	.88	1.17	.90	1.00
3. Cash and Bonds to all Liabilities	.99	1.37	1.02	1.13
4. Surplus to Total Assets	.45	.46	.33	.27

The fourth ratio drawn directly from the balance sheet percentages shows the fire companies as a class had more substantial policyholders' surplus (or net worth) in relation to liabilities than the casualty companies. This difference may well have resulted from the more rapid growth of the casualty than the fire business and the difficulty of building a corresponding equity. Risks of the business are probably as great as or greater in the casualty field than in the fire field. In general, this difference in relative protecting equity has led the casualty companies to invest more heavily in fixed value securities (that is bonds) and make smaller commitments in stocks. This tendency explains why the first three ratios, which measure various relations between cash and bonds to liabilities, show less important differences between the two kinds of insurance. The policy of keeping sufficient fixed value assets to cover all liabilities is appar-

<sup>18</sup> Aggregate data and percentage analysis for individual companies may be found in *Best's Fire and Casualty Aggregates & Averages*. The balance sheet percentages used here are from that source.

ent in all four groups (ratio 3). Some believe that stocks should not exceed the company's surplus proper (or retained earnings), so that price fluctuations will neither endanger solvency nor even threaten impairment of the capital stock. As between the stock and mutual companies in each field the first three ratios show the mutual companies to have invested more heavily in fixed value assets than have the stock companies of the same type.

**Analysis for the stockholder.** Whereas policyholders are primarily concerned with statements to determine the company's solvency, the stockholders are chiefly interested in earning power, with "liquidating" value receiving attention. Reported earnings require adjustment whenever the volume of premium income grows or declines from year to year. The effect of setting up a liability for unearned premiums equal to the full unexpired portion must be allowed for in the fire and casualty field because so much of the underwriting expense, or loading factor, is spent at the time the policy is written. In fire insurance, it is customary to estimate 40 per cent of the premium as sufficient to cover acquisition costs and 60 per cent as adequate to cover fire losses and such minor running expenses as may have to be met during the life of the policy. The characteristic adjustment of reported earnings to allow for the "overstatement" of the unearned premium liability (and so the understatement of earned premium income) is to add 40 per cent of any increase in that liability during the year to the reported net profits.

In a year in which the liability decreased, 40 per cent of that decrease would be subtracted to estimate the true earnings for the year. More particularly, this adjustment applies to the underwriting, or operating, section of the income statement, and so should be used on that section. A roughly equivalent device sometimes employed is to supplement the comparison of *earned* premiums with expenses and losses *incurred* (on an accrual basis) by making a comparison of the premiums *collected* (cash) with the expenses for the year. Thus, if a newly started company wrote \$1,000,000 of premiums and was obliged to spend 40 per cent on commissions and other acquisition costs, a normal relation would appear in a comparison of expenses with premiums collected. If, however, only one half, or \$500,000, of the premiums expired, or were earned, during the year, while the other half were set up as a liability, the ratio of expenses to the *earned* premium income would show the extremely high figure

of 80 per cent. The illustration is extreme, but it indicates the necessity of an adjustment when a large change in the volume of premiums takes place.

The ratio of losses from fire and other hazards plus underwriting expenses to the premium income not infrequently equals or approaches 100 per cent. This operating ratio leads to the popular but inaccurate statement that no profit is made on the insurance business but only on the investments of the company. The statement ignores the fact that the premiums paid in advance supply much of the funds that are invested to produce the investment income. The combined balance sheets given above show more than half of the assets supplied by the policyholders. If the relation of liabilities to stockholders' net worth were exactly fifty-fifty, and if it were further assumed that the assets earned a 5 per cent return in investment income while premium income just covered all underwriting losses and expenses, then the stockholders would earn twice 5 per cent, or 10 per cent, on their net worth. The operations that bring in the funds to increase so considerably the rate of return upon stockholders' investment can hardly be regarded as profitless even though the operating section shows no net return.

The analysis of the investment income is a study of the performance of the investment portfolio, which often includes common stocks as well as bonds. Investment in the former is made possible by the substantial net worth that guards the liability to policyholders. A desirable limitation would be for common stocks not to exceed net worth, so that liabilities would be supported by bonds and other assets less subject to price fluctuation. A more conservative standard would place the maximum limit at the surplus figure, so that not only the liabilities but also the par value of the insurance company's stock might be guarded against impairment.

The favorable rate of return upon stock investments held by fire insurance companies during the first three decades of the present century did much to popularize stock investments generally.<sup>19</sup> Because of the possibility of obtaining the benefits of investment diver-

<sup>19</sup> For the comparative record of bond and stock earnings for some leading fire insurance companies, see Dwight C. Rose, *The Practical Application of Investment Management* (New York: Harper and Brothers, 1933). The original edition of this book, entitled *A Scientific Approach to Investment Management* (New York: Harper and Brothers, 1928), has been regarded as one of the most forceful arguments for common stocks.

sification indirectly through fire insurance companies with a long and well-known record, fire insurance stocks have been regarded as a kind of investment trust, the hazards of underwriting being ignored, at least during good times.

Balance sheet values as well as earnings are given weight in the analysis of an insurance stock. The readiness with which asset values, consisting so largely of listed securities, may be checked against market prices explains this emphasis. Instead of book value, so-called "liquidating value" is ordinarily employed. The latter figure is obtained by first adding to (or subtracting from) the book net worth any security appreciation (or depreciation) resulting from market fluctuations that is not already reflected in the asset figures. To this net worth based on market values is added that proportion of the unearned premium liability which is believed to be in excess of the amount actually needed to meet future losses, 40 per cent being the fraction ordinarily used for fire insurance companies.

In order to make the foregoing technique for estimating "liquidating value" applicable to other lines of property insurance, or to allow for possible changes in the ratios with the passage of years, a more general rule might be developed. The use of the 40 per cent rule is due to the expectation that 60 per cent of the unearned premiums will cover all future losses, the expenses being substantially met at the time the premium is written. So instead of 40 per cent, in any given situation, the proper per cent to use would be the amount by which 100 per cent exceeds the customary loss ratio.<sup>20</sup>

By drawing an analogy between fire and life insurance, it has been suggested that the book value of the stock of the latter should also be increased by some percentage of the reserve liability to give a liquidating value figure. It is pointed out that, typically, such companies experience mortality losses equal to but 55 or 60 per cent of the figure for which the premium rates provide. This argument overlooks the fact that much or all of this gain is returned to the policy-holders in the form of dividends upon participating policies, which even stock companies may issue. With nonparticipating policies, the

<sup>20</sup> Best states the common practice for computing liquidating value per share "...is based on ... [net worth] ..., and the equity in the unearned premiums, uniformly computed at 40% for direct fire and allied lines of business and 35% in the case of reinsurance companies handling the same forms of coverage. A 35% equity is also used for direct casualty lines..." *Best's Insurance Reports, Fire and Marine*, 1951, p. xiv.

stock company finds it necessary to lower its premium rates to such an extent that approximately the same result is achieved; otherwise, such policies would not be readily salable. The benefits that any individual stock company derives from underwriting activities are best discovered by a study of the return earned upon net worth, allowance being made for a nominally high expense ratio, as was previously explained, where a company is engaged in expansion by acquiring an unusual proportion of new business.

**Conclusion.** In the analysis by policyholders of the statements of life insurance companies and of those protecting against property losses, there is a difference in emphasis. In connection with the life insurance companies, primary interest lies in the character of the operations—the mortality, the interest returns, and the expense ratio. Efficiency of operation results in low-cost insurance, because net cost is dependent upon savings effected and the amount of returned dividends. The balance sheet, although of interest as showing the degree of investment diversification and the general soundness of the company, is clearly secondary in importance. For companies offering protection against fire and casualties, however, the earnings are incidental, and the indications of safety recorded in the balance sheet are of first importance.

This difference is due to the fact that, in the former class, the policyholder is usually a part owner, through his mutual policy, and has engaged in a long-term contract, where operating results are likely to have considerable bearing on final results, whereas in the latter class the policyholder is ordinarily a creditor, and his contract is for so brief a period that a balance sheet is a sufficient measure of his safety.

The analysis of an insurance stock, however, requires an investigation of the earning power as well. This work involves a dual study: first, that of the underwriting activities, and second, that of the investment activities. An appreciation of the peculiarities of the business is important in the interpretation of both earnings statements and the balance sheet, as is indicated by the unusual significance of the operating ratio and the common use of liquidating value rather than book value.

## CHAPTER XIX

### Holding Companies

**Nature of the holding company.** In the strict sense, a holding company is a corporation that controls one or more corporations through the ownership of a majority of the shares of their voting stock. In popular parlance, the ownership of enough stock, even though considerably less than a majority, if sufficient to give working control, is regarded as justifying the use of the term "holding company." Minority control is an uncertain thing, and so whenever a precise and objective standard is wanted, as in most accounting, legal, and financial discussions, the first concept is used.<sup>1</sup> The holding company is also spoken of as the "parent" company when it has been instrumental in the formation of the controlled corporation. The latter is referred to as a "subsidiary," or "constituent," company. The corporations related in the holding company system are also called "affiliated" companies, although the word *affiliated* is quite widely used to cover situations in which the control, or the substantial control, of two or more corporations is held by the same interests, such as a family group.

Wherever it is desirable to unify a group of corporations, the easiest method is to acquire a controlling stock interest in these corporations and have these blocks of stock owned by the holding company. To purchase the properties and dissolve the individual companies might be very inadvisable, as it might result in the loss of valuable good will. Moreover, such a step might be more difficult to accomplish, because it would require the agreement of a larger per cent of the stock; for example, in New York state the consent of two thirds of the stock is required before the assets of a corpora-

<sup>1</sup> However, the Public Utility Holding Company Act of 1935 defines a utility holding company, for the purpose of placing it under the jurisdiction of the Securities and Exchange Commission, as one holding 10 per cent of the voting securities, unless the Commission declares otherwise.

tion may be sold, and even a small dissenting minority may create difficulties.

**Purposes of the holding company.** Because of the relative facility with which the holding company relationship may be formed, it is customary to think of it primarily as a device for effecting combinations. Its merits as compared with outright fusion or merger may be stated here so that the possible motives for its use, as financial statements show it being employed in various fields, may be better appreciated. Because the following comparison has to do only with the relative merits of the holding company as a form of organization, the desirability of combination and large-scale operation is not mentioned. Should the hoped-for advantages of combination fail to appear, the grouping can be broken up more readily under a holding company arrangement than when properties and operations have been mingled in a single corporation by merger.<sup>2</sup>

The general advantage of a holding company system over a complete merger of the affiliated companies is that combination is achieved by it and yet the individuality of the various constituents is preserved. More specifically, the chief advantages of the former are:

1. *Financial.*
  - a. It saves the costs and difficulties attendant upon outright merger.
  - b. The holding company is not liable for the debts or other obligations of subsidiaries.
  - c. Relative ease in keeping separate and discontinuing an unprofitable business.
  - d. Keeping various units in separate corporate compartments makes possible the continued financing and expansion of those that are profitable in spite of the weaknesses of the others.
2. *Administrative.* From the standpoint of administration, the single operating company is the more useful if highly centralized.

<sup>2</sup> Thus, in 1933, Drug, Incorporated, decided that its subsidiary properties would be more profitably operated as unrelated units, and proceeded to dissolve by segregating them and distributing among its stockholders holdings in United Drug, Inc., Sterling Products, Inc., Vick Chemical, Inc., Bristol-Myers, Inc., and Life Savers Corporation. Note also the comparative ease with which the utility holding company systems are dismembered under the Public Utility Holding Company Act.

responsibility is desired. The use of subsidiaries facilitates decentralization, because the executive officers of a subsidiary corporation are likely to regard their responsibility as greater and their power to initiate and execute policies larger than they would if they were only divisional heads. Factors that would favor decentralization, and, therefore, the holding company form of organization, would be:

- a. Different lines of products, particularly those which require different methods of marketing or of operation, and so management with different types of experience.
- b. Differences in territory which create special problems that are best handled by local executives.
- c. Competition of the sort that frequently gives rise to nonroutine problems that require prompt action and are best handled by a decentralized system.

### *3. Legal.*

- a. It permits the isolation of business subject to regulation and special accounting publicity, thereby simplifying the problem. This advantage is most important when the system undertakes a variety of business lines.
- b. It permits the formation of units to do business in states or countries where "foreign" corporations suffer from adverse legislation or taxation.

### *4. Public Relations.* It permits individual business units to retain valuable good will that might be lost in a merger.

The major disadvantage inherent in the holding company system is the increased taxation and the other expenses of maintaining a number of corporate organizations. The device has also lent itself to such abuses as (a) unsound financing, it being easier to build a highly speculative pyramid with a complex system of companies than with a single operating company; (b) the mulcting of companies by devious intercompany arrangements; and (c) the concealment of financial conditions through the complexities of holding company accounts.

The actual uses of the holding company arrangement may be found illustrated in any number of our major corporations in virtually every field. The United States Steel Corporation has subsidiaries representing the various stages of production from unmined coal and iron ore to the various finished steel products, and separate com-

panies for various types of products.<sup>3</sup> General Motors Corporation manufactures its various kinds of passenger cars in plants directly owned, and in recent years has merged certain accessory and household appliance subsidiaries. Separate subsidiaries are used, however, (a) to conduct foreign production (such as General Motors of Canada, Ltd.) ; (b) to conduct lines that supplement the merchandising of its products, such as financing, insurance, and accounting (for example, General Motors Acceptance Corporation and General Exchange Insurance Corporation) ; and formerly (c) to own real estate for other than plant purposes (for example, General Motors Building Corporation and Modern Housing Corporation). The similar use of subsidiaries may be found among other large industrial corporations, such as Allied Chemical and Dye Corporation, E. I. du Pont de Nemours and Company, and Standard Oil Company of New Jersey.

Among the railroads, the purchase of stock has often been the first step in a course leading eventually to complete consolidation. So, at any given time, many of the major railroads will be found to be both operating and holding companies. With the advent of the Transportation Act of 1920, the Interstate Commerce Commission was given the power to regulate the acquisition of railroads by other operating companies. The holding company, a purely financial unit owning no physical operating property and so not subject to the Commission, made it possible formerly to avoid the regulation imposed by the Act. The Alleghany Corporation and the Pennroad Corporation were pure holding companies of this type.<sup>4</sup>

Until their recent and wholesale dissolution under the Public Utility Holding Company Act of 1935, the most important use of the pure holding company was in the public utility field. In 1930, nineteen leading holding companies, controlling chiefly electric and gas

<sup>3</sup> See the organization chart of the United States Steel Corporation in L. H. Haney, *Business Organization and Combination* (New York: The Macmillan Co., 3rd ed., 1934), opposite p. 262.

<sup>4</sup> The place of the Alleghany Corporation in the Van Sweringen System (1930) and that of the Pennsylvania Company and the Pennroad Corporation in the Pennsylvania Railroad System (1930) appear in charts in James C. Bonbright and Gardiner C. Means, *The Holding Company* (New York: McGraw-Hill Book Co., 1932), pp. 261 and 265. Section 202 of the Emergency Railroad Transportation Act of 1933 provided that the Interstate Commerce Commission should restrict voting power where railroad stock is so held as to give control to another carrier or to those who control other carriers in a manner contrary to the consolidation plans of the Commission.

properties, had consolidated capital structures totaling \$12,763,000,-000.<sup>5</sup> Nine of these were reputed to be controlled through substantial minority holdings by United Corporation and the Electric Bond and Share Company. This remarkable concentration of ownership was furthered by two important economic factors: (1) the greater financial strength of a large utility system in comparison with a small property; and (2) the efficiency and economy of centralized management, which can give highly trained technical service to a large number of companies that could not individually support such an expensive staff on a full-time basis.<sup>6</sup> Other influences were also present: (1) the desire of engineering and manufacturing groups to control properties to which they could sell services and equipment, (2) the similar wish of investment bankers to control systems in order to obtain the profits from selling their securities, (3) the profits to promoters creating these combinations, and (4) the ease with which large investments can be controlled through a relatively small investment by means of the holding company form of organization.

A classic example to illustrate the last point has always been the former Rock Island Company. The ownership of \$25,000,000 of the preferred stock of that company gave the control of railroads with a capitalization of approximately three quarters of a billion dollars (1906).<sup>7</sup> The utility holding companies offered the most important examples of the control of large systems through the ownership of relatively small amounts of stock of the chief holding company.<sup>8</sup> The bulk of the funds was raised by the sale of bonds and preferred stocks sold by the operating and intermediate holding companies.

<sup>5</sup> Consolidated capital structure proportions of these leading systems for 1930 are reported in *Chicago Journal of Commerce*, Dec. 30, 1931. For a discussion of the development of some of these companies, see Bonbright and Means, *op. cit.*, pp. 90 ff.

<sup>6</sup> That these advantages can be overstressed is suggested by M. H. Waterman's study, *Financial Policies of Public Utility Holding Companies* (University of Michigan, 1932), pp. 2 ff.

<sup>7</sup> In 1907, the system began to grow smaller. Ripley exaggerates the scale of the pyramid by taking the controlling stock interest at a market value of \$5,000,000 while leaving the controlled capitalization at par of \$1,500,000,000, and by including in the latter figure the duplicate capitalization of the pure holding companies. W. Z. Ripley, *Railroads: Finance and Organization* (New York: Longmans, Green & Co., 1915), p. 531. For a chart of this system, see Haney, *op. cit.*, p. 256.

<sup>8</sup> For illustrations, see Waterman, *op. cit.*, Chap. 3, and Bonbright and Means, *op. cit.*, Chap. 5.

**Legality and monopoly.** Although the holding company cannot be chartered in a few states, where it is considered illegal, the leading industrial states permit its existence. Because it is so largely a financial device, it is usually incorporated in some state such as Delaware, where taxes and corporation laws are favorable. In a jurisdiction where "foreign" corporations are subjected to special burdens, the effects of such laws may be limited by the formation of a special subsidiary to conduct operations there.

The threat against the holding company is due not to anything inherently illegal in its nature, but to the possibility that it may be used for an unlawful purpose. Because it facilitates combinations, it may in specific cases run counter to the Federal antitrust laws.

The Sherman Anti-Trust Act was enacted by Congress in 1890 to do away with combinations that acted "in restraint of trade." The Clayton Act was passed as an amendment, in 1914, to increase the effectiveness of the former act. A number of unfair business practices that would tend to reduce competition were forbidden, and stockholdings the effect of which would be "substantially to lessen competition or to tend to create a monopoly" were specifically prohibited by the latter law.

Industrial holding companies have been dissolved when adjudged to have effected an unlawful combination. In the utility field, however, monopoly has been permitted and regulated; hence, the advent of the holding company did not reduce competition, although it increased the complexity of the regulatory problem by creating new and sometimes disturbing intercompany relationships. That there are advantages other than monopolistic control to a business that combines with others is explained in the following statement made in one of the annual reports (1913) of the Standard Gas & Electric Company.

*In not one single instance does the Standard Gas & Electric Company control subsidiaries which are natural competitors. Its subsidiaries in every case are located in different municipalities and so situated that competition, one with the other, is an impossibility. In other words, there is no element of a trust or monopoly as defined by the anti-trust laws in the situation of Standard Gas & Electric Company. Holding companies in the utility field have so thoroughly demonstrated their great advantages, in the way of economical management and facilities for financing, over those possessed by isolated local utility companies that it is hardly within the realm of possibility that any serious attack will ever be made upon them.*

The subsidiary companies may be financed from the proceeds of a single large issue of securities by the parent or holding company. The investor not only has a security of increased marketability, but obtains the increased safety that comes from investment in a number of widely separated properties. The administrative advantages have already been suggested. In spite of these merits, the Security & Exchange Commission has required that the electric and gas utility holding company systems be broken up, except where the subsidiaries form a single integrated system, such as the Southern Company and the West Penn Electric Company. The Southern Company, for example, serves four of the Gulf states with an interconnected electric power system through four chief subsidiaries: Alabama Power Company, Georgia Power Company, Gulf Power Company (northwestern Florida), and Mississippi Power Company.

**Difficulties with statements.** A chief difficulty in studying the holding company lies in securing satisfactory financial statements. From a legal standpoint, the holding company is but an investor in certain stocks. The asset side of its balance sheet would show little more than "Investments," and the income would be "Income from Securities," except when the holding company operates properties directly owned. Practically, this network of corporations should be viewed as a single unit. Herein lies the purpose of consolidated financial statements.

The case has been stated in the following terms in the regulations promulgated under the former Federal income tax law:

The provision of the statute requiring affiliated corporations to file consolidated returns is based upon the principle of levying the tax according to the true net income and invested capital of a single business enterprise, even though the business is operated through more than one corporation. Where one corporation owns the capital stock of another corporation or other corporations, or where the stock of two or more corporations is owned by the same interests, a situation results which is closely analogous to that of a business maintaining one or more branch establishments. In the latter case, because of the direct ownership of the property, the invested capital and net income of the branch form a part of the invested capital and net income of the entire organization. Where such branches or units of a business are owned and controlled through the medium of separate corporations, it is necessary to require a consolidated return in order that the invested capital and net income of the entire group may be accurately determined. Otherwise, opportunity would be afforded for the evasion of taxation by the shifting of income through price-fixing, charges for services, and other means by

which income could be arbitrarily assigned to one or another unit of the group. In other cases, without a consolidated return, excessive taxation might be imposed as a result of purely artificial conditions existing between corporations within a controlled group.<sup>9</sup>

That the problem is by no means a domestic one is shown by the following excerpt from a letter from the Council of the Association of British Chambers of Commerce to the President of the Board of Trade pleading the urgent need for the amendment of the Companies Act of 1929, sometimes held up as a model for American action:

The figures relating to company registrations during the last few years show an enormous growth in the number of subsidiary companies, and the majority of important public companies have adopted the subsidiary company principle to such an extent that their balance-sheets are frequently useless as a guide to the true position of the company. In a number of cases the profit and loss accounts issued to shareholders are useless and misleading through the noninclusion, or only partial inclusion, of the results of subsidiary companies. The accounts of public companies now issued to shareholders are more unsatisfactory than they ever have been when regarded from the standpoint of exhibiting a true and correct view of the state of a company's affairs and its earning capacity.<sup>10</sup>

An illustration of the relatively small amount of information to be had from the pure holding company financial statements may be seen in the following statements of the Southern Company, especially if they are compared with the consolidated statements of the same company shown later. (The income account is even more informative than the customary holding company statement in showing the details of what each subsidiary paid in dividends.) The assets, chiefly investments, sometimes give no clue either as to the type of securities held or as to the kind of properties behind the securities. The liability side does not indicate whether the prior claims of subsidiaries that must first be cared for before the holding company collects on its holdings are many or few. The earnings statement, because it shows only the interest and dividends received (mostly the latter), cannot tell the story of the real earning power available from the subsidiaries and the character of the earnings, which would be reflected in the income statements of the subsidiaries.

<sup>9</sup> Regulations 45 relating to the income tax under the Revenue Act of 1918, Article 631, "Affiliated Corporations." More recent regulations condense this statement.

<sup>10</sup> *Financial Digest* (London), June 18, 1934.

Sometimes it is possible to piece out the position of the holding company from the reports of subsidiaries, regarding the former as merely an investor in the latter. Frequently, however, there is intercorporate business that requires the elimination of certain intercompany profits before the various figures can be combined into one correct statement for the whole group. Such a condition we may best illustrate by a study of the construction of consolidated statements.

**The consolidated balance sheet.** Consolidated statements, in the proper sense, show the condition (balance sheet) and operations (income account) of the parent and constituent companies as though they were parts of a single enterprise. Confusing intercompany relations are eliminated so that the investor in the securities of the holding company can see how his interest stands with relation to the other parts of the system when the various corporations are considered as a group.

When combined, the assets of the affiliated companies fall under the following headings:

1. Assets that are not affected by the intercompany relationship.
2. Amounts owed by one affiliated company to another.
3. Securities of one affiliated company held by another.
4. Assets purchased by one affiliated company from another.

Little need be said of the first class, which is made up of cash and most of the fixed assets. The simple sum of all such assets as are held by the related companies would appear without adjustment in a consolidated balance sheet.

**Intercorp<sup>o</sup>ny accounts receivable, and the like.** As for any amount owed by one of the companies to another, whether it is a promissory note, an advance, a loan, or an account, it is a liability for one company to the same amount that it is an asset for another. The group being viewed as a single enterprise, the two items are eliminated. Their inclusion would be regarded in the same light as would the inclusion among the assets in a manufacturer's balance sheet of a loan by that manufacturer to a branch office with the inclusion of the liability of the branch office among the current liabilities. The actual treatment is, of course, to omit both items and merely add the cash of the branch office (or whatever other asset was transferred) to the similar asset of the home office.

## THE SOUTHERN COMPANY

## CORPORATE BALANCE SHEET

December 31, 1951

*Assets*

Investments in Subsidiary Companies, stated at underlying book value, exclusive of retained earnings since January 1, 1948	\$ 154,693,581
Investments in Other Nonconsolidated Subsidiaries and Service Companies at Cost or Less	72,784
Current Assets:	
Cash	\$ 777,914
U. S. Government Securities, at Cost	4,383,236
Accounts Receivable	1,909
	5,163,059

## Deferred Debits:

Capital Stock Expense	93,828
	\$160,023,252

*Liabilities*

Capital Stock Equity:	
Common Stock (par value \$5)	\$ 81,532,470
Amount Paid-in in Excess of Par Value	73,271,455
Earnings Retained in the Business since January 1, 1948	3,975,483
	\$158,779,408

## Current Liabilities:

Accounts Payable	\$ 891
Due to Associated Companies	1,272
Accrued General Taxes	47,363
Accrued Federal and State Income Taxes	1,129,531
Miscellaneous	64,787
	1,243,844
	\$160,023: •

## STATEMENT OF EARNINGS

For the Year Ended December 31, 1951

## Dividends from Subsidiaries:

Alabama Power Co.	\$ 6,938,053
Georgia Power Co.	6,197,018
Gulf Power Co.	845,000
Mississippi Power Co.	1,255,500
Interest	65,079
Total Income	\$15,300,650
General Expenses*	732,109
General Taxes	57,647
Federal Income Tax	1,040,438
Net Income	\$13,470,456
Dividends	12,845,195
Balance after Dividends	\$ 625,261 •

**Intercompany security holdings.** Securities are treated in the same manner as are the accounts and notes, as far as possible. They are different in that they may be carried by the holding company at an asset value different from the amount shown on the liability side of the issuing company's balance sheet. How this discrepancy is handled will be considered in connection with the showing of stock and surplus for the consolidated statement.

It is important that there be a complete consolidation of all the related companies. The combination of the statements of only those companies that are in good condition and the carrying of the weaker subsidiaries under the asset "Investments" in the consolidated balance sheet is to be guarded against.

**Intercompany transactions.** The last class of assets to be considered are those which have been purchased by one of the companies from another. The most common example is inventory purchased from an affiliated company. Because intercompany transactions are to be viewed as interdepartmental matters in the consolidated statements, intercompany profits have to be eliminated in the valuation of the consolidated inventory. The details of method whereby the accountant handles this elimination for the purposes of the consolidated statements need not concern us except as it is desirable for the reader of statements to recognize the principle involved and to understand any terminology referring to this practice.<sup>11</sup> The financial

<sup>11</sup> The details of accounting covering such technical matters as the non-elimination of that portion of the profit attributable to the minority stockholders, the determination of the amount of profit to be eliminated, and the handling of intercompany losses may be studied in H. A. Finney and H. E. Miller, *Principles of Accounting—Advanced* (New York: Prentice-Hall, Inc., 4th ed., 1952), pp. 389-396. A striking example of profits taken on sales to subsidiaries was disclosed in the report of Gillette Safety Razor Company to the New York Stock Exchange in a listing application dated Nov. 11, 1930. In the five-year period, 1925-1929, prior to the merger with AutoStrop Safety Razor Company, reported earnings exceeded actual earnings by an average of \$2,370,000 annually. This discrepancy arose from the practice of billing goods to foreign selling subsidiaries at approximately the domestic wholesale prices, taking profits at once in the form of accounts receivable, and thus anticipating unrealized profits. For the years 1927, 1928, and 1929, the company had reported to stockholders, in not fully consolidated statements, net profits of \$14,581,000, \$16,244,000, and \$13,582,000, respectively. The certified and fully consolidated statements to the Exchange showed profits of \$13,122,000, \$12,632,000, and \$10,244,000 for the same years (Standard Statistics Company annual report card April, 1934.)

statements may make no reference to the elimination, but it will be assumed that audited and certified statements will conform to the generally accepted accounting principles on this point. However, the reader may find the inventories in the consolidated balance sheets show a deduction for a "reserve for intercompany profits" or some equivalent item. Should such a "reserve" appear on the liability side, it would be regarded as a valuation type of reserve in preparing the balance sheet for ratio analysis.

In general, the same principle of eliminating any profit element on any other assets acquired by one company from another in the holding company system is pursued. The most common other item is construction work. Elimination of intercompany profit results in a conservative valuation of the fixed assets.<sup>12</sup>

**Liabilities.** The debts in the consolidated balance sheet will be the sum of the liabilities owed to parties other than such corporations as are of the group. This rule calls only for the elimination of the intercompany indebtedness in the manner already discussed, and refers, of course, to debts only, the subject of stock requiring special treatment.

**Capital stock and surplus.** The par value of the stock issued by the holding company may be less than, equal to, or greater than, the sum of the par values of the stock acquired in subsidiary corporations. If the first is the case, then the excess of par value might be said to be the equivalent of paid-in surplus from the standpoint of the holding company. Such surplus will normally be set apart from the profit and loss surplus in the consolidated balance sheet and may be designated "Capital Surplus."

This situation may be created by the issuance of no-par-value stock for the stock of the companies being brought together through a holding company, and may be illustrated by the case of a holding company issuing 100,000 shares without par value for \$7,000,000 par value of stock (which is the total outstanding) of companies which show on their books a surplus aggregating \$2,000,000. If this stock has no par value but has a "declared value" or stated value of \$5 per share and the liabilities amount to \$1,000,000, our consolidated balance sheet will then read:

<sup>12</sup> Finney and Miller, *op. cit.*, Chapter 22.

<i>Assets</i>	<i>Liabilities</i>
Sundry Assets . . . . .	\$10,000,000
	Sundry Liabilities . . . . .
	Common Stock (100,000 shares without par value)      500,000
	Capital Surplus . . . . .      6,500,000
	Initial Surplus . . . . .      2,000,000
	<u>\$10,000,000</u>
	<u>\$10,000,000</u>

The division of surplus just illustrated draws a line between capital surplus and the subsidiaries' earned surplus. Inasmuch as the \$6,500,000 might be mistaken for capital surplus showing as such on the books of the subsidiaries, a clearer statement would follow the form in the consolidated balance sheet of the American Gas and Electric Company, as of December 31, 1951:<sup>13</sup>

Net Excess of Investment in Subsidiaries Consolidated over Equity in their Assets, Exclusive of Earned Equity	\$30,742,693
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The "Initial Surplus" of \$2,000,000 represents the combined Earned Surplus accounts of the subsidiary companies. Because all of the property at the date of acquisition is "principal" or "capital" from the standpoint of the buyer, this initial surplus is capital surplus for the holding company, which will usually make dividend distributions only from surplus earned subsequent to the date of purchase of its investments.<sup>14</sup> Such treatment is clear and satisfac-

<sup>13</sup> In the consolidated balance sheets (1940) of the American Power & Light Company and the Electric Power & Light Company, the Plant account was stated with a deduction for the net adjustment arising from the elimination of intercompany-held securities, including the balance of surplus of subsidiaries at dates of acquisition, as adjusted.

<sup>14</sup> The American Institute of Accountants in its Research Bulletin No. 1 (1939), p. 6, stated: "Earned surplus of a subsidiary created prior to acquisition does not form a part of the consolidated earned surplus of the parent company and subsidiaries; nor can any dividend declared out of such surplus properly be credited to the income account of the parent company." In general, this principle is not observed elsewhere in the fields of finance and taxation. Thus, the purchaser of investment company shares may subsequently receive "capital gains" dividends that represent realized appreciation that took place prior to his purchase and determined the purchase price of his shares. Nevertheless, he will be required to report such dividends as capital gains for income tax purposes even though they are a return of his principal. The investment aspect of this matter is discussed in R. E. Badger and H. G. Guthmann, *Investment Principles and Practices* (New York: Prentice-Hall, Inc., 4th ed., 1951), p. 473.

tory as long as the value of the stock issued does not exceed the par value of the stocks acquired. Whenever the amount of stock issued by the holding company does exceed that figure, the surplus of the combined companies will be reduced by the amount of excess, unless some adjustment, such as the one mentioned below, is made.

Sometimes the stock issued by the holding company exceeds not only the surplus but the combined stock and surplus of the acquired subsidiaries. A deficit in the consolidated balance sheet may be avoided in such cases by the introduction of good will into the list of assets of the consolidated statement.<sup>15</sup> If the amount of good will created is made equal to the excess of stock issued over stock acquired (par value), the surplus of the consolidated balance sheet will, as in the illustrative statement above, exactly equal the combined surplus of the affiliated corporations. If, however, good will is added only for an amount equal to the excess of the stock issued (par value) over the book value (combined stock and surplus) of the acquired stock, there will be no surplus in the consolidated balance sheet at the time the holding company is formed. Surplus will result later from retained earnings of members of the group subsequent to their combination.

Sometimes the excess paid by the holding company over the amount shown as book value for the shares acquired in a subsidiary may represent not good will but recognition of higher current values for the assets than are shown on the subsidiary's balance sheet. Good practice now recognizes the desirability of showing excess amounts in this latter category separately from the good will in the consolidated balance sheet under a suitable caption.<sup>16</sup> The practical difficulties of making any such allocation commonly leads to the treatment of the whole excess as good will.

<sup>15</sup> The item of good will will normally be the sum of (a) the good will asset in the balance sheets of the separate companies plus (b) the amount by which the aggregate book value to the holding company of the stocks of subsidiary companies exceeds the par value of that stock and the surplus at the date of acquisition. Finney and Miller, *op. cit.*, p. 335. Thus, the *Annual Report* of General Motors Corporation (1933) stated (p. 23): "The Corporation's standard accounting practice interprets good will as the difference between the purchase price and the book value of properties acquired . . ."

<sup>16</sup> The American Institute of Accounting Research Bulletin No 24 (1944), "Accounting for Assets," p. 200, recommends that if practicable any excess paid over book value should not only be divided as between tangible and intangible assets but allocated more precisely to the several assets.

**STATEMENT I**

Detailed Balance Sheets of Holding Company (A) and Two Operating Subsidiary Companies (B and C)

December 31, 1941

	(1) Company A	(2) Company B	(3) Company C	(4) Combined	(5) Eliminations	(6) Cleared
<b>Assets:</b>						
Cash	\$150,200	\$ 66,800	\$ 46,100	\$ 263,100		\$ 263,100
Inventories		311,600	198,400	510,000		510,000
Accounts Receivable Special		12,000	15,000	27,000	\$ 27,000	
Prepaid and Deferred Charges	20,000	38,700	19,200	77,900		77,900
Advances to Subsidiaries	60,000			60,000	60,000	
Plant and Equipment		275,000	154,800	429,800		429,800
Investments in Company B (stock at par)	175,000			175,000		
Investments in Company C (stock at par)	200,000			200,000		
Investments in Company A (stock at par)		25,000		25,000		
Investments in Company B (bonds at par)	30,000			30,000	30,000	
<b>Total</b>	<b>\$635,200</b>	<b>\$729,100</b>	<b>\$433,500</b>	<b>\$1,797,800</b>	<b>\$517,000</b>	<b>\$1,280,800</b>
<b>Liabilities:</b>						
Current Liabilities	\$ 54,000	\$265,000	\$152,100	\$ 471,100		\$ 471,100
Owing to Company C		15,000		15,000	\$ 15,000	
Owing to Company B			12,000	12,000	12,000	
Advances from Company A		25,000	35,000	60,000	60,000	
Bonds Payable		• 50,000		50,000	30,000	20,000
Capital Stock	500,000	300,000	200,000	1,000,000	400,000	600,000
Surplus	81,200	74,100	34,400	189,700		189,700
<b>Totals</b>	<b>\$635,200</b>	<b>\$729,100</b>	<b>\$433,500</b>	<b>\$1,797,800</b>	<b>\$517,000</b>	<b>\$1,280,800</b>

**HOLDING COMPANIES**

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**STATEMENT II****GENERAL BALANCE SHEET OF COMPANY A AND SUBSIDIARIES B AND C COMBINED  
(Without Elimination of Intercompany Items)**

December 31, 1941

**Assets:**

Cash . . . . .	\$ 263,100
Inventories . . . . .	510,000
Accounts Receivable Special . . . . .	27,000
Prepaid and Deferred Charges . . . . .	77,900
Advances to Subsidiaries . . . . .	60,000
Plant and Equipment . . . . .	429,800
Investments in Stocks and Bonds of Affiliated Companies . . . . .	430,000
<b>Total Assets . . . . .</b>	<b>\$1,797,800</b>

**Liabilities:**

Current Liabilities . . . . .	\$ 471,100
Advances and Intercompany Obligations . . . . .	87,000
Bonds Payable . . . . .	50,000
<b>Capital Stock Outstanding:</b>	
Company A . . . . .	\$500,000
Company B . . . . .	300,000
Company C . . . . .	200,000
<b>Combined Surplus . . . . .</b>	<b>189,700</b>
<b>Total Liabilities . . . . .</b>	<b>\$1,797,800</b>

**STATEMENT III****CONSOLIDATED BALANCE SHEET OF COMPANY A AND ITS SUBSIDIARIES**

December 31, 1941

**Assets**

Cash . . . . .	\$ 263,100
Inventories . . . . .	510,000
Prepaid and Deferred Charges . . . . .	77,900
Plant and Equipment . . . . .	429,800

**Liabilities**

Current Liabilities . . . . .	\$ 471,100
Bonded Debt of Company B . . . . .	\$50,000
Less Bonds Held by Company A . . . . .	30,000
Minority Stockholders Interest in Subsidiaries (par of stock \$125,000, surplus \$30,875) . . . . .	155,875
Capital Stock Issued . . . . .	\$500,000
Less 250 Shares Held by Subsidiary Companies . . . . .	25,000
Surplus . . . . .	475,000
	158,825
<b>\$1,280,800</b>	<b>\$1,280,800</b>

Commonwealth & Southern Corporation, with assets in excess of a billion dollars, showed this item not as good will or even as an asset but as a deduction from surplus, which on December 31, 1930, was stated as follows:

**CAPITAL AND SPECIAL SURPLUS:**

Capital Surplus Balance of Subsidiary Companies . . . . .	\$ 43,515,329
Surplus Balance of Present Subsidiary Companies as of Dates of Control . . . . .	23,394,739
Capital Surplus Balance of the Commonwealth & Southern Corporation . . . . .	<u>575,609.701</u>
	<u>\$642,519.769</u>
<b>Less—Excess Amount at which Subsidiary Company Securities are Carried by Parent Company over the Par or Stated Value of Such Securities of Subsidiary Companies</b> . . . . .	<b>630,112,957</b>
	<b>\$ 12,406,812</b>
	<b>• 8,548,255</b>

**EARNED SURPLUS**

In later years the net amount only was shown.

A company might arbitrarily add this intangible item of good will to some tangible asset. The likely method for such concealment would be by an addition to the Property account. Good accounting practice, however, would forbid any increases in valuation in the process of transferring figures from the accounts to the balance sheet.

**Minority stockholders.** The discussion up to this point has ignored the fact that in many cases the holding company does not own all the stock of the subsidiary and so does not have an undivided interest in the net assets of that subsidiary. The interest of the minority stockholders will be shown on the liability side of the consolidated balance sheet and should equal the par or stated value of this minority stock plus its *pro rata* fraction of the subsidiary's surplus.

**An illustration of balance sheet consolidation.** For those unfamiliar with accounting technique, an examination of the methods used in assembling a relatively simple case may be useful. The first of the preceding statements gives details of the individual companies' statements with the intercompany obligations stated separately. The second statement brings together in a single balance sheet the information obtained without eliminating any intercompany relations. The last statement repeats the information, making the customary eliminations.<sup>17</sup>

<sup>17</sup> These statements are from R. J. Bennett, *Corporation Accounting* (New York: Ronald Press Co., 1916), pp. 458, 460, and 461, with slight changes.

The consolidated balance sheet of the Southern Company with all intercompany accounts eliminated may now be presented for comparison with the holding company balance sheet given above (page 551). Whereas the latter resembled the report of an investment company, the former appears much like that of most operating electric public utilities.

**Consolidated capital structures.** To show the proportions of the consolidated capital structure of the whole holding company system, a separation between subsidiary and holding company securities is necessary. Instead of the all common stock capital structure used by the Southern holding company, American Telephone and Telegraph Company employed holding company debt in 1951, as seen in the accompanying table. This debt is compensated for by an unusually low level of debt at the operating company level.

CONSOLIDATED CAPITAL STRUCTURE PROPORTIONS ..  
OF SOUTHERN COMPANY AND  
AMERICAN TELEPHONE AND TELEGRAPH COMPANY, 1951

(Millions of Dollars)

	<i>Southern Co.</i>	<i>A. T. &amp; T.</i>		
	\$	%	\$	%
<b>Subsidiaries:</b>				
Bonds	314	53	1,778	20
Preferred Stock	99	17	18	—
Minority Interest	2	—	151	2
<b>Holding Company:</b>				
Bonds	—	—	1,929	22
Preferred Stock	—	—	—	—
Common Equity	177	30	4,727	56
Total	<u>592</u>	<u>100</u>	<u>8,603</u>	<u>100</u>

In the case of Southern Company, the long-term debt and preferred stocks are wholly issues of the subsidiary operating companies. The small amount of subsidiary common stock that is not owned by the holding company appears, with its pro rata share in surplus, as "Minority Interest." This simplicity of capital structure has developed generally among the electric and gas holding company systems since they came under the regulatory powers of the Securities and Exchange Commission in 1935. In place of complex holding company setups, their senior financing often follows conventional operating company lines with the holding common stock taking the place of

## HOLDING COMPANIES

## THE SOUTHERN COMPANY AND SUBSIDIARIES

## CONSOLIDATED BALANCE SHEET

December 31, 1951

<i>Assets</i>	
Utility Plant at Original Cost . . . . .	\$639,485,710
Plant Acquisition Adjustment . . . . .	27,059,799
Other Physical Property . . . . .	7,946,605
Investments in and Loans to Other Unconsolidated Subsidiaries . . . . .	594,418
Other Investments' . . . . .	870,113
Excess of Cost of Investment in Birmingham Electric Co. over Underlying Book Value . . . . .	187,792
Prepayments . . . . .	1,277,689
Debt Discount, Premium, and Expense . . . . .	503,774
Capital Stock Expense . . . . .	399,244
Deferred Charges . . . . .	246,839
<b>Current Assets:</b>	
Cash . . . . .	\$ 10,054,052
U. S. Government Securities . . . . .	18,642,563
Special Deposits . . . . .	9,070
Receivables (less \$658,901 provision for bad debts) . . . . .	11,761,659
Materials and Supplies . . . . .	18,206,609
Total Current Assets . . . . .	\$ 58,673,953
Total Assets . . . . .	<u><u>\$737,245,936</u></u>
<i>Liabilities</i>	
Common Stock (par value \$5) . . . . .	\$ 81,532,470
Minority Interest in Subsidiaries . . . . .	175,836
Subsidiary Preferred Stocks . . . . .	98,356,400
Premium on Preferred Stocks . . . . .	61,111
Long-Term Debt . . . . .	313,804,470
Bond Premium (Net) . . . . .	2,590,680
Reserve for Depreciation . . . . .	101,441,700
Reserve for Possible Adjustment of Property Accounts . . . . .	2,335,930
Reserve for Insurance . . . . .	763,428
Customers' Advances for Construction . . . . .	405,101
Contributions in Aid of Construction . . . . .	609,594
Paid-In Surplus . . . . .	73,271,455
Earned Surplus . . . . .	21,228,679
<b>Current Liabilities:</b>	
Notes Payable . . . . .	1,010,000
Accounts Payable . . . . .	6,472,919
Sinking Fund Requirements . . . . .	3,188,530
Accrued General Taxes . . . . .	2,982,326
Accrued Interest . . . . .	2,247,109
Income Taxes . . . . .	20,088,293
Customers' Deposits . . . . .	2,231,540
Other Current Liabilities . . . . .	2,448,365
Total Current Liabilities . . . . .	\$ 40,669,082
Total Liabilities . . . . .	<u><u>\$737,245,936</u></u>

the common of the several operating subsidiaries for public financing with only an occasional use of bonds or preferred by the holding company itself. In the telephone field, American Telephone and Telegraph Company, which is partly operating company (long-distance lines) but chiefly holding company, has succeeded in switching its debt financing from mortgage issues, still the common rule in the electric utility field, to debentures. Moreover, the debenture bonds of this holding company have achieved a high investment standing so that it has been possible to substitute to a considerable extent its own debt financing for that of the operating companies. The standing of this holding company's debentures is partly the result of a relatively limited use of operating company issues and partly the broader diversity of security offered by a nation-wide organization over that of a regional operating company.

**Consolidated earnings statements.** The first charge upon earnings is the interest upon the debt of the operating subsidiaries, after which their preferred dividends are paid, the balance being left for subsidiary common stock. This common usually forms the bulk of the assets of the holding company. A portion, usually a small one, of the income at this point belongs to the minority common stockholders. The remainder, going to the holding company, is the basis for the interest, preferred dividends, and common earnings of its securities. Because such distributions are possible only when the subsidiaries' common stocks show earnings, the holding company securities are junior, as a class, to the bonds and preferred stocks of the subsidiaries. Whether funded debt for the holding company itself will be speculative in nature or not will depend upon the stability of earnings and the amounts of prior claims in the form of subsidiary charges. When, as in the case of holding companies such as the American Telephone and Telegraph Company, these claims are not large and the equity of the holding company is very substantial, the bonds of the latter will rate highly. They may conform to the standards usually set for the financing of an operating company.

A fully consolidated earnings statement would, like the consolidated balance sheet, eliminate all intercompany items and show the operations of all controlled companies merged. Recognition that subsidiaries' earnings may not always be consolidated and the difficulties of consolidated statements are reflected in the rules of the Securities and Exchange Commission (Regulation S-X, Article 4), which do

not require consolidation. The regulation states that inclusion or exclusion of majority-owned subsidiaries of the company in consolidated statements should be decided so that the end result "will clearly exhibit the financial condition and results of operations" of the company and its subsidiaries. A warning is given that "due consideration shall be given to the propriety of consolidating . . . foreign subsidiaries whose operations are effected in terms of restricted foreign currencies." Suitable statements are required for nonconsolidated subsidiaries where "it is essential to a properly summarized presentation of the facts."

Various other rules are designed to insure clarity, such as that any change in the companies consolidated and differences between the investment in subsidiaries and the valuation of the net assets that represent that investment on the books of the subsidiary, shall be fully set forth in the report of the holding company.

The practice of partial consolidation is most likely to appear in industrial holding company systems—for holdings in minor corporations, or units with activities very unlike the main business, or holdings in jointly controlled subsidiaries.<sup>18</sup> It is also the practice not to consolidate a subsidiary in receivership or bankruptcy. Although such halfway consolidation of accounts may be open to objection at times, there are cases where it is most fitting to treat even a wholly-owned subsidiary as an investment. A clear-cut case is that of the National Bank of Detroit. Formed after the bank moratorium, as a result of the closing of the leading Detroit banks, one half of the \$25,000,000 capital was taken by the Reconstruction Finance Corporation in the form of preferred stock, and the balance, in the form of common stock, was underwritten by General Motors Corporation. Because less than a fourth of this common was taken by the public, the corporation purchased a very substantial part of the total. Regardless of whether or not this stock represented a controlling interest, an attempt to consolidate the bank's assets and liabilities in the statements of the automobile manufacturer would have made for confusion rather than for clarity:

<sup>18</sup> Thus, prior to 1936, General Motors Corporation included in its income account its proportion of the undivided profits and losses of certain companies in which substantial interests were held. Beginning in 1936, only dividends were included in income. Any net losses, however, were reflected in a reduction of the Investment account.

As a result of the disturbed international conditions of the depression of the 1930's and World War II, many corporations have come to regard foreign assets and operations as best segregated from their domestic operations. So, perhaps with the exception of Canadian interests, these foreign assets most often appear as Investments in Foreign Subsidiaries.<sup>19</sup> Only dividends actually received may appear in the earnings statement. Frequently, the undistributed earnings will be reported in accompanying footnotes.

Because the earnings are the primary determinant of value and the ability of the holding company system to support its obligations, interest centers in the consolidated earnings statement. An illustration of the holding company consolidated form of Income statement may be had in the statement of the Southern Company, whose balance sheet appears on page 560.

The figures showing operating results are subject to the analysis procedure customary for the type of business involved, in this case that of an electric utility. The difference lies chiefly in the differences in the holding company capital structure. The first claims upon earnings are the interest charges of the operating subsidiaries' bond-holders. Only their *average* position can be ascertained by dividing the sum of their interest claims into available income (typically taken after income taxes). The similar average status of the subsidiary preferred stocks is obtained by using the sum of the interest and preferred dividend claims as a divisor into available income. The resulting measurements of coverage may not be truly representative because some subsidiaries may be much better and some much poorer than this combined result shows. The only precise measures of quality are to be had by measuring the position of individual subsidiary issues as they stand with respect to the earnings of the various individual issuing companies. So the "times earned" measures for subsidiary charges must be read with caution as to their meaning.

In studying the coverage of the holding company's charges, one must regard them as junior claims; and the "over-all" method of analysis, which combines them with the prior charges of the subsidiaries, gives the most accurate indication of their position.<sup>20</sup> The share of the income attributable to the minority common stock, how-

<sup>19</sup> See footnote 9, page 77.

<sup>20</sup> See above, page 269, as to the merits of the "over-all" basis for measuring "times earned."

**HOLDING COMPANIES****THE SOUTHERN COMPANY AND SUBSIDIARIES****CONSOLIDATED STATEMENT OF INCOME**

For the Year Ended December 31, 1951

**SUBSIDIARIES COMBINED:****Operating Revenue:**

Electric .....	\$149,619,830
Transit .....	328,357
Heating .....	1,133,764
<b>Operating Revenue</b> .....	<b>\$151,081,951</b>

**Operating Expenses and Taxes:****Operation:**

Operation Expense, other than detailed below .....	\$ 30,238,717
Fuel Used in Electric Generation .....	24,244,487
Purchased and Interchanged Power .....	2,474,435

Total Operation .....	\$ 56,957,639
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Maintenance .....	9,677,555
Depreciation .....	15,035,347

Amortization of Plant Acquisition Adjustments .....	2,496,199
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General Taxes .....	12,760,155
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Federal Taxes on Income .....	14,889,163
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State Taxes on Income .....	1,279,101
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Property Loss Chargeable to Operations (equivalent to tax reduction resulting from such loss) .....	4,333,649
---	-----------

Transit Operating Loss (applicable to transit properties sold in 1951) .....	590,204
--	---------

Total Operating Expenses and Taxes .....	\$118,019,012
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Operating Income Before Special Charges .....	\$ 33,062,939
---	---------------

Other Income (less taxes) .....	427,530
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Gross Income Before Special Charges .....	\$ 33,490,469
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**Income Deductions and Dividends on Preferred Stock:**

Interest on Long-Term Debt .....	\$ 9,987,595
----------------------------------	--------------

Amortization of Debt Premium, Discount, and Expense (Net) .....	82,544*
---	---------

Miscellaneous Income Deductions .....	897,050
---------------------------------------	---------

Interest Charged to Construction .....	940,300*
--	----------

Dividends on Preferred Stock .....	4,958,825
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Total Income Deductions and Dividends on Preferred Stock .....	\$ 14,820,626
--	---------------

Net Income of Subsidiary Companies after Dividends on Preferred Stock .....	\$ 18,669,843(a)
---	------------------

**THE SOUTHERN COMPANY:**

Interest Income—Other (less taxes) .....	\$ 65,079*
--	------------

General and Miscellaneous Expense .....	732,109
---	---------

General Taxes .....	57,647
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Provision for Federal Income Tax .....	1,040,438
--	-----------

Total (The Southern Company) .....	\$ 1,765,115
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THE SOUTHERN COMPANY AND SUBSIDIARIES (*cont'd*)

<b>CONSOLIDATED NET INCOME</b>	<b>\$ 16,904,728</b>
(a) Of This Amount The Southern Company Received as Dividends	<b>\$ 15,235,571</b>
Shares of Common Stock of The Southern Company Outstanding (End of Period)	<b>* 16,306,494</b>
Earnings Per Share (End of Period)	<b>\$1.04</b>
Dividends Paid:	
Per Share—Annual Rate	<b>\$ .80</b>
Aggregate Amount	<b>\$ 12,845,195</b>

\* Denotes red figures

Source: *Prospectus*, June 4, 1952.

ever, is neither a definite charge nor prior to the holding company's claim. Because it is based on subsidiary common stocks of the same sort as yield the holding company its income, it is on a parity with the latter. The most satisfactory method, then, of studying the number of times the holding company interest is covered is to eliminate the minority interests' share from the total net income of the system. The remainder is then divided by the sum of the subsidiaries' interest and preferred dividends and the holding company's interest. Whenever this method is applied, care must be taken to insure that the eliminated minority interest represents subsidiary common stock on a parity with the holding company's interest.<sup>21</sup> The coverage for the holding company's preferred dividends is obtained by simply increasing the divisor in the preceding formula to include such dividends. The coverage figures for the holding company issues may lack the significance that they have for the individual company. The holding company is a separate legal entity from its subsidiaries. Common stock earnings of a subsidiary may not be available to the holding company because of the former's pressing financial needs as for debt retirement or asset expansion. On the other hand, the consolidated net income may be nil, but the holding company may find

<sup>21</sup> Moody's reported the "times interest earned" for Purity Bakeries Corporation bond interest as 1.68 and 2.44 for 1932 and 1933, respectively, combining bond interest and the minority interest in earnings as charges:

	1932	1933
Total Income	\$1,134,838	\$1,553,761
Interest, etc.	411,767	397,929
Minority Interest	262,185	238,860

The reason for this unusual treatment was that the minority interest was almost entirely preferred stock of a subsidiary.

it possible to draw dividends from one or a few prosperous subsidiary units.

Such indexes of safety as these formulas provide should be merely the first step to a more thorough analysis, especially when invidious intercompany comparisons are to be made. Equal "times earned" figures, even on an over-all basis, do not necessarily mean equally strong credit positions because of such factors as the following:

1. Differences in stability of earning power may arise from differences in the character of the demand.
2. A system with a favorable growth trend should find such a trend helpful in offsetting the influence of subnormal business in depression.
3. In particular years, a system may show heavy charges incurred in financing property the earning power of which takes time to develop.
4. Different systems may vary in the likelihood of their suffering from rate reductions because of property valuation or other factors.
5. Allowance must be made for the conservatism of the system in reporting earnings. Generous maintenance and depreciation policies may result in a comparative understatement of strength.
6. Weakness or strength may be concealed in those stock holdings which are not a part of the consolidated picture. Failure to consolidate may be due to holdings that are a minority interest or are less than the arbitrary percentage that the holding company requires before making the subsidiary a part of the consolidated picture.
7. A mixture of weak and strong subsidiaries may result in an understatement of the position of the holding company's securities because of its ability to allow an insolvent subsidiary to go into receivership without allowing it to drain resources from the rest of the system.<sup>22</sup> Thus, a holding company with one profitable subsidiary and one losing subsidiary might show no earnings on a consolidated basis. Yet if it were willing to abandon the weaker unit to its fate, the stronger unit might supply ample funds to care for the holding company's charges.

<sup>22</sup> Except in the special situation where it has guaranteed subsidiary obligations. The same liability may result indirectly from a fixed lease of subsidiary property, which may be found in real estate subsidiaries, or a contract to purchase its product.

This last point brings out the most important weakness of the unsupported consolidated report. Details on subsidiaries' conditions and operations may be essential for determining the true position of the holding company and for preventing an unduly pessimistic conclusion from the effect of a few unprofitable subsidiaries, the harmful results of which can be isolated by virtue of their separate incorporation. Just as the consolidated statements represent a distinct advance over the simple reports that treated the holding company as merely an investment company, so reports that contain added data relative to the individual subsidiaries are often necessary for an adequate study of the holding company securities. Some holding companies recognize this need by including separate subsidiary reports as a part of their annual reports.<sup>23</sup> In some cases the subsidiaries publish independent reports because of the public interest in their issues. Again, the subsidiaries may represent no more than divisional operations that have little independent significance save as they are a part of the consolidated picture.

**Summary.** In addition to the special problems incident to analyzing the statements of a business in any given field of enterprise, the holding company form of organization superimposes its own peculiar financial and legal characteristics. Three types of information are likely to be helpful in studying such a situation: (1) The pure holding company statements, which treat the corporation as a mere investor in stocks, give some information as to current position, capital structure, and the usual amounts of income collected and the form it takes. (2) Chief reliance, however, is placed upon the consolidated statements, which show the whole system of corporations as a single unit. Such consolidation of accounts eliminates earnings arising from intercompany relations, and is designed to bring out both strength and weakness which might otherwise be cloaked under the accounts of a separate subsidiary corporation. (3) Because the liabilities and troubles of each corporation can be shut off by

<sup>23</sup> Thus, the West Penn Electric Company issued a handbook of Historical, Financial and Operating Data (1950) which showed statistical and financial data for both the system and the three major operating subsidiaries, which latter have securities in the hands of the public. Some railroads, such as the Union Pacific Railroad Company, supply summary statements of subsidiaries in their annual reports, but these subsidiaries may be treated as investments and not consolidated. Separate reports for industrial company subsidiaries are most frequently omitted as lacking independent significance.

these separate corporate entities, a third type of information is sometimes necessary: that of separate subsidiary reports permitting the investor to note the possibilities of isolating and dropping or re-organizing unprofitable units that make the composite picture unattractive. Such individual reports may be invaluable in clarifying the situation when the various properties are of unlike character.

## **SELECTED REFERENCE MATERIAL**



## Preface to Problems

The problem material has been compiled on the assumption that the reader has an understanding of the general principles of accounting. The emphasis has been placed on the form and interpretation of financial statements rather than the bookkeeping and accounting techniques used in their preparation. It is realized, however, that users of a book of this nature will have varying backgrounds, and degrees of experience in accounting. For this reason a wide range in length and difficulty of problems is presented, and it is expected that each reader will select the problems most suitable for his use. Some of the problems are directly applicable to the related chapters; others are intended for review. Some problems, such as those adapted from C. P. A. examinations, were prepared without particular chapters or textbooks in mind, and may therefore include points that will require the reader to go outside of the related chapter in the text and perhaps even necessitate going to the library or other sources. In such instances the reader will find the index, the footnotes, and the selected reference material at the end of the text helpful.

Interesting and unusual statements or parts of statements have been taken from annual reports of actual companies in order to illustrate current trends in financial reporting. Problems have been made of these statements or excerpts, some simple and some more complex, in order to bring out the unusual treatments found in them. Quite naturally a statement of this kind may cover material that the student will find explained in several different chapters of the text.

Problems identified as coming from A.I.A. Examinations have been reprinted (by permission) from Uniform Certified Public Accountant Examinations prepared by the board of examiners of the American Institute of Accountants.

Following are listed corporations that furnish interesting analytical material for the various characteristics noted. Addresses of these and other major corporations that the instructor may wish to use may be found in *Moody's Manual of Investments*.

**Admiral Corporation.**

1951 report has 16-year statement of unusual record of earnings and net worth growth in radio and television field.

**American Airlines, Inc.**

Interesting for high proportion of bonds and preferred stock (latter convertible).

**American Telephone and Telegraph Company.**

Largest nonfinancial corporation offers both holding company and consolidated statements.

**Armco Steel Corporation.**

10-year record as well as interesting discussion of background factors.

**Citizens & Southern National Bank, Savannah, Georgia.**

Has an unusually detailed 5-year statement of earnings as well as a 2 year comparative balance sheet (1951).

**City National Bank & Trust Company, 10th & Grand Ave., Kansas City, Missouri.**

Received (1950) *Financial World* award for "best in the industry" annual report.

**Columbia Gas System, Inc.**

Company publishes an unusual compilation, "Financial, Statistical, and Operating Data," to supplement annual report.

**Du Pont de Nemours Company, E. I.**

Interesting because of treatment of earnings. Reports equity in earnings of General Motors stockholdings.

**Fidelity and Deposit Company of Maryland.**

Report indicates hidden values from conservative accounting.

**Gair (Robert) Company, Inc.**

Example of company requiring analysis of subsidiary companies.

**General Cable Corporation.**

Unusual capital structure (recapitalization with two preferred issues). Interesting trading on equity and convertible preferred.

**General Finance Corporation.**

Finance company using subordinated bonds as well as bank loans and preferred stock.

**General Motors Corporation.**

Long term record.

**Hilton Hotels Corporation.**

An unusual number of nonrecurring items that are segregated in earnings statements.

**Island Creek Coal Company.**

An unusual record of a profitable company in a depressed industry.

**Maryland Casualty Company.**

An unusual case of an insurance company with two preferred stocks, one convertible.

**National Dairy Products Corporation.**

10-year comparative condensed balance sheets and profit and loss statements as well as detailed two-year comparison. Leaders in dairy products. Growth situation.

**New York Central Railroad Company.**

Interesting for reporting both consolidated and ordinary statements in recent years. Complex debt and lease structure.

**Philip Morris and Company.**

Raises question of need for considering continuing bank debt in comparing capital structure with other tobacco companies.

**Studebaker Corporation.**

1951 annual report supported by centennial report covering long-term financial figures.

**Western Union Telegraph Company.**

A record of unusual depreciation and amortization for a utility, especially during late 1940's.

Write to the *Financial World* (86 Trinity Place, New York 6) for its most recent annual list of corporations receiving awards for the quality of their annual reports.

## Problems for Chapter II

(Miscellaneous problems will be found on page 669)

**2-1.** Review the following statement carefully and explain in detail how it differs from the orthodox form.

**BURROUGHS ADDING MACHINE COMPANY  
AND SUBSIDIARY COMPANY OPERATING IN THE UNITED STATES  
STATEMENT OF FINANCIAL CONDITION—DECEMBER 31, 1950 AND 1949**

	STOCKHOLDERS' INVESTMENT	
	1950	1949
NON-PAR VALUE STOCK, 5,000,000 shares authorized and issued	\$25,000 000	\$25,000,000
Less cost of shares held by the company (2 610 shares, 1950, 3 610 shares, 1949)	40 547	56,082
	<u>\$24,959 453</u>	<u>\$24 943,918</u>
INCOME INVESTED IN THE BUSINESS SINCE INCEPTION OF COMPANY	27 201 447	23 678,982
	<u>\$52 160 900</u>	<u>\$48 622,900</u>

USED IN THE BUSINESS AS FOLLOWS

**WORKING CAPITAL**

**Assets Required to Carry on Daily Transactions**

Cash	\$ 8,733,442	\$ 8,868,895
U S Government Securities	1,501,630	1,985 650
Amounts Receivable from Customers and Others, Less Estimated Amounts Which May not be Collected	15,502 611	9,766,905
Amounts Receivable from Subsidiary Companies Operating in Other Countries Less Reserve	3,418 102	994,896
Inventories of Purchased Materials and Finished and Partly Finished Products	?1,609,182	20,047,943
Expenses Paid in Advance	187 854	924,923
Current Assets	<u>\$50,952 821</u>	<u>\$42,589,302</u>

**Amounts Owing by the Company for Purchases, Wages, Taxes, etc.**

Unpaid Bills for Materials and Services	\$ 1,357,343	\$ 613,763
Wages and Commissions Owing to Employees ..	3,908,008	2,976,838

**PROBLEMS**

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	1950	1949
Estimated Income Taxes Owing to U. S. Government, Less \$1,500,000 U. S. Treasury Tax Notes	3,492,171	2,385,365
Owing for Social Security, Property, and Other Taxes . . . . .	1,593,907	791,791
Payments by Customers for Products and Services to be Delivered in the Future	10,216,591	8,625,623
Estimated Cost of Guaranteed Service on Machines Sold	408,889	370,982
Current Liabilities . . . . .	\$20,976,909	\$15,764,362
Working Capital . . . . .	\$29,975,912	\$26,824,940
 INVESTMENTS in and Advances to Subsidiary Companies Operating in Other Countries, at Cost	 *2,298,873	2,245,976
COST OF LAND, BUILDINGS AND EQUIPMENT Used for the Production and Sale of Products, Reduced by the Estimated Cost of Wear and Exhaustion (Depreciation) . . . . .	18,891,800	18,683,633
OTHER ASSETS . . . . .	991,315	868,351
	 \$52,160,900	\$48,622,900

**2-2.** Select the current-asset and current-liability items from among the following list of debit and credit accounts and classify them in the manner in which they might respectively appear on the balance-sheet of a large manufacturing company (amounts not required).

Debits	Credits
Plant and equipment	Accrued payroll
Cash in bank	Reserve for renegotiation of U. S. Government contracts
Inventory of operating parts and supplies	Notes payable
Inventory of raw materials	Accrued interest on bonds
Good will	Reserve for depreciation
Cash and U.S. Government bonds set aside for property additions	Accounts payable
Investment in subsidiary	Capital surplus
Accounts receivable:	Accrued interest on notes payable
Regular . . . . .	5% 1st mortgage bonds to be redeemed in 6 months
Installments—due in 1 to 24 months	Capital stock—preferred
Patent rights	Income applicable to future years
Inventory of finished goods	Reserve for contingencies
Inventory of work in process	4½% 1st mortgage bonds due in ten years
Deficit . . . . .	

<i>Debits</i>	<i>Credits</i>
Interest accrued on U. S. Government securities	Preferred stock dividend
Notes receivable	Reserve for doubtful accounts receivable
Petty cash fund	Provision for Federal income taxes
U. S. Government securities	Excess overhead distributions
Treasury stock	Customers' advances (on contracts to be completed in 8 months)
	Reserve for raw-material inventory
	Officers' bonus accrued

If among the foregoing there appear to you to be certain borderline cases that you are unable to classify without further information, mention them and explain your difficulty, or give your reasons for making questionable classifications, if any

(Adapted from A I A Exam)

**2-3.** The following excerpt was taken from the balance sheet of the National Biscuit Company.

Retained earnings-	
Appropriated	
Insurance and Contingent Reserve	\$ 3,726,188
Reserve for High-Cost Plant Additions	12 000 000
Inventory Reserve	5 000 000
Unappropriated	39,706 535

1 Comment on the form and terminology of the headings  
 2 Explain why the items listed are properly shown as appropriated earnings

**2-4.** The following amounts are taken from the books of a certain company. Set down all balances that constitute a part of the company's net worth and give the total net worth

Various Assets	\$361,000
Various Liabilities	\$115,000
Capital Stock	150,000
Paid-in Surplus	20,000

Earned Surplus	\$ 9,000
Loss on Sale of Treasury Stock	3,000
Reserve for Working Capital	\$ 10,000
Reserve for Property Taxes	2,500
Reserve for Bad Debts	3,500
Reserve for Sinking Fund	35 000
Reserve for Depreciation	27,000
Totals	<u>\$373 000</u> <u>\$373 000</u>

**2-5.** The net worth section of a corporation balance sheet shows the following accounts:

Preferred Stock, 6% Cumulative	\$300,000
Preferred Stock, 6% Noncumulative	200,000
Common Stock, par \$100	600 000
Unappropriated Surplus	78 000

(a) What is the amount of dividends that would be payable to each class of stock if the entire surplus were distributed? Both preferred issues participate at an equal rate with the common after all stock has received 6%. The company began business just two years previous to the date of the balance sheet and has paid no dividends  
 (b) Same as (a) except that surplus is assumed to be \$117,000

**2-6.** Reserves have been classified as:  
 Valuation Reserves that Offset Assets.  
 Liability Reserves  
 Proprietorship Reserves

(a) Indicate without comment in which class you would place the following by writing "V" (Valuation), "L" (Liability), or "P" (Proprietorship) to the right of the numbers on a separate sheet of paper:

1. Reserve for Depreciation.
2. Reserve for Sinking Fund
3. Reserve for Extension of Plant.
4. Reserve for Property Taxes.
5. Reserve for Doubtful Accounts.
6. Reserve for Self-Insurance
7. Reserve for Pensions Owing to Aged Employees.
8. Reserve for Cash Discounts on Sales
9. Reserve for Estimated Income Taxes.
- 10 Reserve for Personal Injury Suit (unfavorable decision expected).

11. Reserve for Contingencies (provision for possible but improbable future losses).<sup>1</sup>
12. Reserve for Retirement of Bonds Issued.
13. Reserve for Prospective Market Decline in Inventories.
14. Reserve for Unrealized Profit in Branch Inventories.
15. Reserve for Obsolescence.
16. Reserve for Working Capital.
17. Reserve for Depletion.
18. Reserve for Appreciation per Appraisal.
19. Reserve for Retirement of Preferred Stock.
20. Secret Reserve Created by Excessive Depreciation Charges.

(b) Accounting Research Bulletin No. 34 (A. I. A.) recommended that the term "reserve" be limited "to indicate that an undivided portion of the assets is being held or retained for general or specific purposes and that the use of the term in the balance sheet, in describing deductions from assets or provisions for particular liabilities and in the income statement be discontinued."

Suggest terms to use instead of those in part (a) for those reserves covered by the recommendation.

**2-7.** The Hassett Co., Inc. issued \$1,000,000 of 20-year, 4% bonds, and used the proceeds for plant expansion. The indenture requires the establishment of a sinking fund by annual payments of \$50,000 to a trustee. The indenture also requires an annual provision of \$50,000 for a sinking fund reserve "to be set aside out of earnings."

In a certain year the annual payment was made, and in addition the trustee purchased \$50,000 face amount of the company's bonds on the open market. In view of this "reacquisition of bonds," the annual provision for the sinking fund reserve was omitted.

A financial analyst complains that the company's statement of net income for the fiscal year overstates earnings by \$50,000, because it shows no charge for the annual payment to the trustee, and leads investors to believe that there are earnings available for dividends that the company is in no position to pay.

Explain whether or not the omission of the reserve provision was justified and criticize the analyst's complaint. Include in your answer a discussion of the purposes of sinking funds and related reserves.

(Adapted from A. I. A. Exam.)

**2-8.** A corporation presents the following condensed statement as of the close of the year:

Cash . . . . .	\$ 90,000	Dividends Payable . . . . .	\$ . . . . .
Other Assets . . . . .	1,510,000	Other Liabilities . . . . .	500,000
		Common Stock . . . . .	500,000
		5% Preferred Stock . . . . .	300,000
		6% Preferred Stock . . . . .	200,000
		Surplus . . . . .	100,000
	<u>\$1,600,000</u>		<u>\$1,600,000</u>

The 5% stock is cumulative, the 6% stock is noncumulative, and both participate equally in the remaining surplus profits by being entitled to an extra dividend equal to the excess of any common dividend rate over and above 5% per annum. The balance in Surplus represents the excess of the profits for the current year over operating losses of the two preceding years. You may assume that the maximum dividends are to be declared.

A. Compute the book value per share for each class of stock in the following cases:

- 1. Current year's dividends unpaid.
- 2. Dividends unpaid for two years.
- 3. Dividends unpaid for three years.

B. What dividends could legally be declared to the various classes of stockholders, assuming that the 5% stock is nonparticipating, the 6% stock is participating on the basis stated and no dividends are in arrears?

Given: A (1) is computed below in order to illustrate the method and form which may be used.

	5%	6%	=
	Preferred	Preferred	Common
Capital Stock . . . . .	\$300,000	\$200,000	\$500,000
5%, 6% and 5% for Current Year . . . . .	15,000	12,000	25,000
3.6% to All for Remaining Surplus . . . . .	14,400	9,600	24,000
Total Book Values . . . . .	<u>\$329,400</u>	<u>\$221,600</u>	<u>\$549,000</u>
Per Share Book Values . . . . .	109.80	110.80	109.80

(Adapted from A. I. A. Exam.)

**2-9.** The net worth section of the X Corporation balance sheet shows the following information:

	Case (1)	Case (2)
Earned Surplus Unappropriated . . . . .	\$ 594,000	\$ 514,000
Preferred Stock, Cumulative, Nonparticipating . . . . .	300,000	400,000
(Par \$50.00 per share, basic 8% dividend rate on par)		

	Case (1)	Case (2)
Preferred Stock, Noncumulative, Participating .....	\$ 400,000	\$ 500,000
(Par \$25.00 per share, basic 8% dividend rate on par)		
Common Stock (Par \$10.00 per share) .....	<u>500,000</u>	<u>600,000</u>
Total net worth .....	<u>\$1,794,000</u>	<u>\$2,014,000</u>

The company commenced operations three years ago and has paid no dividends to date. For the noncumulative preferred stock, assume that the first two years are "closed years" and that the latest year is the "open" or "current year." Compute for each class of stock the total share of surplus and the book value per share.

**2-10.** The net worth section of Energy Corporation's balance sheet lists the following:

Preferred Stock, 7%, \$20 Par, Participating, Noncumulative .....	\$ 400,000
Preferred Stock, 7%, \$100 Par, Cumulative, Nonparticipating .....	600,000
Common Stock, \$5 Par .....	500,000
Earned Surplus Unappropriated .....	<u>267,000</u>
Total net worth .....	<u>\$1,767,000</u>

The company was formed four years ago, but has not paid or declared any dividends to the date of the balance sheet. For the noncumulative preferred stock assume that the first three years are "closed years." Compute for each class of stock the total book value and the book value per share.

**2-11.** The net worth section of the R. Co balance sheet shows:

	Case (1)	Case (2)
6% Preferred Stock, Par \$100, Cumulative, Nonparticipating .....	\$200,000	\$300,000
Common Stock, Par \$10 .....	500,000	600,000
Earned Surplus Unappropriated .....	300,000	420,000

- The current year's preferred dividends have already been paid.
  - (a) What is the book value *per share* of the preferred stock and the common stock?
  - (b) If a 20% stock dividend on common were to be declared and distributed, what would then be the book value *per share* of each class of stock immediately after such dividend?
  - (c) If a 20% cash dividend on common were to be declared and distributed (instead of the 20% stock dividend described above), what would then be the book value *per share* of each class of stock immediately after such dividend?

**2-12.**

(a) If the net book value per share of common stock is \$24.00, what will be the net book value per share *after* a  $33\frac{1}{3}\%$  stock dividend?

(b) If the net book value per share of common stock is \$40.00, *after* a 20% stock dividend, what was the net book value per share *before* such dividend?

**2-13.** In response to a request from a prospective client, criticize briefly, item by item, the form and terminology of the following balance sheet.

**BALANCE SHEET OF THE ABC COMPANY**

FOR THE YEAR ENDED DECEMBER 31, 19—

*Assets*

## Current Assets:

Cash and Related Items	.....	\$ 11,000
Accounts and Notes Receivable	.....	758,000
Raw Material (market \$100,000)	.....	160,000
Work in Process, Cost	.....	35,000
Finished Goods, Sales Price	.....	315,000
Supplies	.....	78,000
Investments	.....	155,000

## Fixed Assets:

Land, Buildings, Machinery, Patents	.....	1,500,000
Investments	.....	300,000
Treasury Stock	.....	18,000
Deficit	.....	800,000
Total Assets	.....	<u><u>\$4,130,000</u></u>

*Liabilities*

## Current Liabilities:

Miscellaneous Current Liabilities	.....	\$ 54,000
Accounts and Notes Payable	.....	826,000

## Fixed Liabilities:

Mortgages and Bonds	.....	1,000,000
Preferred and Common Stock	.....	1,700,000
Reserves for Depreciation	.....	200,000
Miscellaneous Reserves	.....	350,000
Total Liabilities	.....	<u><u>\$4,130,000</u></u>

**2-14.** The December 31, 19— balance sheet of a medium-sized manufacturing corporation did not include the following items among the current liabilities (All are material in amount):

- (a) Notes payable to a group of twelve stockholders, the notes to become due and payable on demand of at least eight of the group.
- (b) A note in settlement of which the holder accepted preferred stock six days after the date of the balance sheet.
- (c) Rent collected in advance.

For each of the items above, you are to give arguments to justify the exclusion from current liabilities. If your answer involves assumptions as to facts not given in the question, state your assumptions.

(Adapted from A. I. A. Exam.)

## Chapter III

**3-1.** \*The information given below was taken from the books of J. H. Craft. Two years ago, when he started the business, he had no inventory on hand, as his initial investment was in the form of cash.

	Current Year	Previous Year
Goods Sold	\$53,000	\$42,000
Goods Bought	30,000	28,000
Operating Expenses	10,000	9,000
End Inventories	18,000	12,000

Mr. Craft prepared the following summary:

Total Income	\$53,000	\$42,000
Total Costs	40,000	37,000
Net Income	<u>\$13,000</u>	<u>\$ 5,000</u>

Were the profits computed correctly for the two years? If not, show how the calculations should be made and account for the error in profit each year and for the two-year period.

**3-2.** The directors of a certain corporation submitted a statement to its bank in which the net income for the year was shown to be \$115,000.

An accounting firm was engaged by the bank to audit the books of account and records of this corporation for the purpose of verifying the net income as shown by the statement.

The audit disclosed the following facts that were not taken into consideration:

(a) There was no provision for depreciation, amounting to \$27,-500;

(b) Dividends of \$12,500 on preferred stock were payable on the day following the closing of the books;

(c) Machinery, manufactured by the company for its own use, had been charged to plant account at market prices, which were greater than cost;

(d) In accordance with the terms of a trust deed, under a bond issue, \$15,000 should have been credited to a sinking fund; and

(e) There was included in the net income, reported by the directors, \$18,000 derived from transactions apart from the usual business operations of the company.

State in what respects the net income, as reported by the directors, was incorrect and explain how each of the above items should be treated on the statements of the corporation.

(Adapted from A. I. A. Exam.)

### 3-3.

#### THE MARCH MANUFACTURING COMPANY

##### PROFIT AND LOSS STATEMENT

(1) For Year Ended Oct. 31, 19—

(2) Net Sales		\$8,429,841.18
Cost of Sales		5,860,977.06
Gross Profit		\$2,568,864.12
Expenses:		
Selling	\$1,201,365.51	
Administrative and General	346,137.32	1,547,502.83
Operating Profit		\$1,021,361.29
Income Charges and Credits:		
Interest Paid and Discounts Allowed	\$172,655.84	
Other Items—Net	18,529.58	191,215.42
Profit before Inventory Write-Down and Federal Income Taxes		\$ 830,145.87
(3) Inventory Write-Down (To reduce values of inventories on hand to cost, or market, whichever lower)		220,528.16
Profit before Federal Income Taxes		\$ 609,617.71
Federal Income Taxes		162,150.74
Net Profit		\$ 447,466.97
(4) Provision for Reserve for Loss on Purchase Commitments (To provide reserve for difference between cost and market values of future raw material commitments)		112,632.45
Net to Surplus		\$ 334,834.52

**Notes:**

(5) The Company at the start of the year adopted the policy of providing for customers' cash discounts by establishing a reserve to provide for such expenses. The amount so provided during the year was \$10,838.10 in excess of the discounts allowed. As a result of the adoption of this procedure, profits for the year are thus amount less than would have been indicated under the former accounting method.

(6) Depreciation on appreciated values amounting to \$29,616.15 has been charged to surplus by appreciation.

Various items of the statement above have been numbered. Answer the following questions pertaining to these items:

- (1) Is there anything unusual about the period covered by the statement?
- (2) What probably accounts for the difference between this figure and gross sales and would the inclusion of the latter give additional value to the statement?
- (3) How is the loss ordinarily handled, and what can be said in favor of the company's method of showing it?
- (4) Is this item properly deductible after rather than before the net profit figure is obtained? Explain.
- (5) Is this information of sufficient importance to justify such a long footnote? Discuss the advantages and disadvantages of handling cash discounts by the reserve method.
- (6) What is the meaning of this statement?

\* 3-4. An owner of a chain of three drug stores has submitted comparative profit and loss statements to a person who is considering purchasing the three stores. The prospective purchaser looked over the statements and they appeared all right to him with the exception of the gross profit figures. He asks you to examine that part of the statements given below. In your opinion have the statements been "properly prepared?"

	<i>January</i>	<i>February</i>
<i>Store #1</i>		
Sales .....	\$4,138.97	\$3,631.85
Less Cost of Sales .....	2,855.89	2,505.98
Gross Profit .....	<u>\$1,283.08</u>	<u>\$1,125.87</u>
<i>Store #2</i>		
Sales .....	\$4,438.20	\$3,774.09
Less Cost of Sales .....	3,026.42	2,604.12
Gross Profit .....	<u>\$1,375.78</u>	<u>\$1,169.97</u>

## PROBLEMS

595

Store #3	January	February
Sales	\$3 262 18	\$3 201 85
Less Cost of Sales	2 250 91	2 209 28
Gross Profit	\$1,011 27	\$ 992 57

(Adapted from Wisconsin C.P.A. Exam)

3-5. The following is an interesting example of an early financial statement. Contrast it with the form used in present-day statements, and point out specific differences that reveal the evolution that has taken place in statement presentation.

*Early Butler Brothers Statement.*

<u>Boston August 1, 1858</u>		
<u>Statement</u>		
<u>For Month of July</u>		
<u>Assets</u>		
Merchandise	\$ 59,18 56	
Bills Receivable	5 156 54	
Bank Account	133 16 12	
Cash	110 26	
Contingent National Park	440 60	
Real Estate at Cambridge	4100 00	
Furniture	787 38	
<u>Liabilities</u>		
Bills Payable	1 2523 46	
Bank Account	61470 50	
Art Capital	20 454 50	
	2 9754 46	1 29,56 06
<u>Gross</u>		
On Hand Merchandise	\$ 936 74	
Real Estate at Cambridge	97 55	
Discount	851 62	
<u>Less</u>		
Balance of Art Capital	640 69	
Capital	4358 55	
Interest	469 14	
(Insurance)	196 14	
Art Draw	14200 39	
	1 9364 41	1 9564 91

**PROBLEMS**

**3-6.** The following statement was presented by a credit union. Comment on the form used and prepare the statement in correct form.

**PROFIT AND LOSS***Expenses:*

Interest Paid .....	\$ 32.50
Other Expenses .....	170.33
Cash Over and Short .....	329.00
Guaranty Fund .....	229.15
Reserve Fund .....	221.84
Dividends .....	694.76
Total .....	<u>\$1,677.58</u>

*Income:*

Interest Received .....	\$1,191.54
Fines .....	73.06
Other Income .....	13.68
Entrance Fees .....	70.00
Cash Over and Short .....	329.30
Total .....	<u>\$1,677.58</u>

**3-7.** The Chain Belt Company presented the following statements in its annual report in addition to a more detailed balance sheet and statement of income and expense:

**SIMPLIFIED BALANCE SHEET**

October 31, 1951

THE COMPANY OWNED, Generally Known as Assets Cash in Banks, and United States Government Securities .....	Amount	Per Share
\$ 2,998,052	\$ 6.13	
Amounts Owed the Company by its Customers, Generally Known as Accounts Receivable .....	3,670,074	7.50
Inventories, Including Raw Materials, Materials in Work, and Finished Goods; for Sale to Customers Land, Buildings, and Equipment, after Deduction for the Wear and Tear on These Properties; Generally Known as Fixed Assets .....	8,601,862	17.59
Miscellaneous Items, Including Government Fa- cilities to be Billed, Amounts Paid in Advance for Insurance, etc. ....	8,397,447	17.17
Total .....	1,045,753	2.14
	<u>\$24,713,188</u>	<u>\$50.53</u>

## PROBLEMS

1997

	<i>Amount</i>	<i>Per Share</i>
<b>THE COMPANY OWED, Generally Known as Liabilities For Materials and Supplies, Wages and Salaries to Employees, and Such Things as a Dividend to Stockholders, Real Estate and Social Security Taxes, etc .</b>	<b>\$ 2,871,040</b>	<b>\$ 5.87</b>
For Income Taxes Payable to State Governments in 1952 (Tax Liability to the Federal Govern- ment is Covered by United States Savings Notes)	396,977	.81
Notes Payable, for Money Borrowed to Provide Additional Working Capital	2 100,000	4.30
<i>Amount invested in the business by the Stock- holders, (Stockholders' Ownership)</i>	<i>19 345 171</i>	<i>39.55</i>
<b>Total</b>	<b><u>\$24 713 188</u></b>	<b><u>\$50.53</u></b>

### SIMPLIFIED STATEMENT OF INCOME AND EXPENSE

For the Fiscal Year 1951

	<i>Amount</i>	<i>Per Dollar of Sales</i>
<b>THE COMPANY RECEIVED</b>		
From Customers for the Goods and Services Pur- chased by Them	\$38 969 396	\$ 1.00
<b>THE COMPANY'S EXPENSES WERE</b>		
For Materials Supplies Subcontracted Work and Services Purchased from Others This Included Such Things as Iron and Steel Insurance Adver- tising, Upkeep of Equipment etc	\$18,487,618	\$ .474
For Wear and Tear on Machinery Tools, and Buildings, Generally Known as Depreciation	429,163	.011
For Income Taxes Owing to State and Federal Governments	3 750 000	.096
Making a Total of	<u>\$22,666 781</u>	<u>\$ .581</u>
Which Left for Wages, Salaries, Dividends and for Reinvestment in the Business	<u><u>\$16 302,615</u></u>	<u><u>\$ .419</u></u>

### THIS WAS DIVIDED AS FOLLOWS

Paid to Employees as Wages and Salaries for Goods Sold in 1951, Including Employee Benefits Paid by the Company such as Pensions, Group Insurance, Social Security, etc .	\$13,739,029	\$ .353
Paid to Stockholders as Dividends for the Use of the Buildings, Machinery, Equipment, and Working Capital Provided by Their Investments	1,247,503	.032
Retained in the Business to be Invested in Inven- tories, Buildings, Machinery, and Working Funds •	1 316 083	.034

1. What benefits are obtained from such simplified financial statements and explain how it is accomplished from the information furnished?
2. Are these what are termed percentage or "commonsize" statements? Explain.
3. Set down each amount in the simplified balance sheet and state in what section it would likely appear in a detailed classified balance sheet.
4. What is the per share book value?
5. Why is not the amount paid to employees treated as other expenses?
6. Compute the net income for the year.
7. Compute the dividends paid per share during the period.

**3-8.** List the differences between the following and the more conventional form of statement.

**BURROUGHS ADDING MACHINE COMPANY  
AND SUBSIDIARY COMPANY OPERATING IN THE UNITED STATES**

**STATEMENT OF OPERATIONS FOR YEARS 1950 AND 1949**

	1950	1949
Charges to Customers for Products Sold and Services Rendered	\$86,931,628	\$82,460,121
Miscellaneous Income	488,658	193,870
Total Income from Operations	<u>\$87,420,286</u>	<u>\$82,653,991</u>
Cost of Manufacturing Products Sold and Rendering Services	\$49,380,288	\$47,958,731
Social Security, State and Local Taxes	2,537,431	2,135,256
Estimated Cost of Wear and Exhaustion of Facilities (Depreciation)	1,863,946	1,378,048
Rent Paid for Use of Sales and Other Offices	1,186,783	1,123,083
Other Costs of Marketing Products and Conducting the Business	21,335,382	20,737,637
Estimated U. S. Taxes on the Year's Income	4,775,000	3,550,000
Total Costs	<u>\$81,078,830</u>	<u>\$76,882,755</u>
Dividends Received from Subsidiary Companies Oper- ating in Other Countries	\$ 6,341,456	\$ 5,771,236
Net Income for the Year	1,678,460	1,708,462
Dividends Paid—\$.90 a Share	\$ 8,019,916	\$ 7,479,698
Balance of Income Invested in the Business	4,497,451	4,496,041
Income of Prior Years Invested in the Business	\$ 3,522,465	\$ 2,983,657
Income Invested in the Business Since Inception of Company	23,678,982	20,695,325
	<u>\$27,201,447</u>	<u>\$23,678,982</u>

**3-9.** Illustrate how the two notes listed below should appear in the maker's balance sheet so as to indicate most accurately the true facts:

1. On the date of issue;
2. At the end of 6 months.

Accept the amounts as stated to be correct.

a. Non-interest-bearing note for \$1,000.00 due in 1 year, discounted at 5% on date of issue. Proceeds \$952.38.

b. Note at 5% for \$952.38 due in 1 year. Proceeds \$952.38. Interest for 1 year \$47.62.

(Adapted from Wisconsin C. P. A. Exam.)

## Chapter IV

**4-1.** Explain the possible significance of the changes in the following balances taken from comparative balance sheets of a company whose sales volume remained approximately the same for the twelve months indicated:

	<i>On a Certain Date</i>	<i>Six Months Later</i>
Accounts Receivable . . . . .	\$250,000	\$175,000
Notes Receivable . . . . .	80,000	240,000

**4-2. (a)** What is meant by the Natural Business year (special year) in an industry?

(b) Prepare a comparison of Working Capital statement from the following post-closing trial balances for the Showhow Company at the close of two different months and select the one which in your judgment reflects the end of the natural business year.

	<i>June 30</i>	<i>December 31</i>
Cash . . . . .	\$ 43,800	\$ 10,200
Notes Receivable . . . . .	5,000	21,000
Notes Receivable Discounted . . . . .	\$ 3,000	\$ 16,000
Accounts Receivable . . . . .	35,100	64,300
Reserve for Bad Debts . . . . .	1,850	3,100
Merchandise Inventories . . . . .	48,300	98,900
Plant and Equipment . . . . .	131,640	138,640
Reserve for Depreciation . . . . .	27,201	29,482
Good Will . . . . .	100,000	100,000
Other Assets . . . . .	2,533	2,596
Notes Payable . . . . .	15,000	30,000

	June 30	December 31
Accounts Payable .....	21,577	58,653
Bonds Payable .....	75,000	75,000
Capital Stock .....	100,000	100,000
Surplus .....	122,745	123,401
	<u>\$366,373</u>	<u>\$435,636</u>
	<u>\$366,373</u>	<u>\$435,636</u>

(c) State the advantages of preparing financial statements at the end of the natural business year.

(Adapted from Wisconsin C. P. A. Exam.)

**4-3.** You are called in to make a special investigation for one of your clients who is in the business of selling an article of merchandise at retail. During the past years he has sold entirely on a cash on delivery basis but has decided to sell on the installment plan. You are asked to determine the working capital that will be required to finance the business on the installment plan. The article sells for \$150.00. The down payment is to be \$15.00 and installments thereafter are to be paid at the rate of \$15.00 per month. Each article costs your client \$90.00. During the past year the selling expenses were \$30.00 per article sold, the overhead charges \$15.00, and the net profit \$15.00. Your client must pay for the article at the time he sells it. Based on past sales, the volume for the coming year is estimated to be as follows:

Quantity Sold	Quantity Sold
January .....	75
February .....	125
March .....	150
April .....	200
May .....	400
June .....	400
July .....	200
August .....	150
September .....	150
October .....	150
November .....	150
December .....	150

Prepare a schedule with column headings as given below, showing for each month information similar to that worked out for January. The last column should indicate the maximum working capital requirements.

#### WORKING CAPITAL REQUIREMENTS (ESTIMATED)

Month	Quantity Sold	Cumu- lative Quantity Sold	Cash Receipts	Cash Payments	Monthly Excess of Receipts over Payments	Total Cash Deficiency
Jan.	75	75	\$1,125	\$10,125	\$9,000	\$9,000

(Adapted from Wisconsin C. P. A. Exam.)

**4-4.****COMMERCIAL CREDIT COMPANY AND SUBSIDIARIES**

(except Insurance Subsidiaries)

**•NOTE TO FINANCIAL STATEMENTS**

The valuations of these inventories vary in the various manufacturing subsidiaries. The various bases used are as follows:

	Dec 31 1950	Dec 31 1949	Dec 31 1948	Dec 31 1947
Standard Cost not in excess of market	\$1 738 723.44	\$1 104 352.86	\$ 906 641.08	\$ 651 822.57
Cost last in first out basis	697 546.33	369 689.77	933 310.05	1 289 769.61
Lower of Cost or Market				
first in first out basis	1 858 649.91	1 709 596.72	961 888.29	824 669.14
Lower of Cost or Market	4 469 145.04	2 975 686.94	, 391 668.19	4 026 562.44
Cost				792 604.70
Estimated Cost		417 019.74	478 152.94	464 611.88
	<u>\$8 764 064.72</u>	<u>\$6 576 346.03</u>	<u>\$8 673 181.25</u>	<u>\$7 550 138.84</u>

1 Explain the terms used in the foregoing to describe the bases of valuation of the inventories

2 Suggest several other bases for valuing inventories

3 Under what headings would you assume the inventories above would be classified for statement purposes?

**4-5.** Examine the data shown on page 602 and give your answers to the following

1 State the amount by which the following were affected by the change in accounting policy in 1950

- (a) Inventories
- (b) Federal income taxes
- (c) Net profit for the year

2 Do you think many companies adopt the LIFO method because of current tax savings?

3 Is there any particular reason why merchandising companies were encouraged to use the LIFO method around 1950?

4 The opinion of independent auditors contained data on the change in accounting policy. Why?

5 How do you account for the credit of \$170,000 in 1949 for recovery of Federal income taxes?

6 Does the table show the value of divisional or departmental statements? Explain

In a footnote to the financial statements of Butler Brothers and subsidiary companies it was stated that "In pricing inventories

at December 31, 1950, the companies adopted the last-in, first-out method of determining cost instead of the first-in, first-out method previously used."

Further explanation was given in the President's annual report including the following:

Comparative earnings by divisions for 1949 and 1950 (before and after the LIFO adjustment) are shown in the following table:

	1950		1949
	After adjustment to the LIFO basis	Before adjustment to the LIFO basis	
<b>Operating profit or loss:</b>			
Retail division .....	\$1,094,430	\$1,474,936	\$352,075*
Floor covering division .....	493,695	926,047	637,394*
Wholesale division .....	3,362,407	3,727,606	
Other income .....	385,766	385,766	175,139
Total .....	\$5,336,298	\$6,514,355	\$814,390*
<b>Provision for or credit for recovery of Federal income taxes:</b>			
Normal and surtax .....	\$2,300,000	\$2,755,000	\$170,000†
Excess profits tax .....	100,000	350,000	—
Total .....	\$2,400,000	\$3,105,000	\$170,000†
<b>Net profit or loss for year .....</b>	<b>\$2,936,298</b>	<b>\$3,409,355</b>	<b>\$644,390*</b>
<b>Per share of common stock outstanding</b>	<b>\$2.21</b>	<b>\$2.63</b>	<b>\$0.93*</b>

\* Denotes loss.

† Denotes credit.

**4-6.** The following questions dealing with inventories have been adapted from A.I.A. examinations:

1. A manufacturing concern follows the practice of charging the cost of direct materials and direct labor to work in process, but charges off all indirect costs (factory overhead) directly to profit and loss. State the effects of this procedure on the concern's financial statements, and comment on the acceptability of the procedure for use in preparing statements.

2. In selecting a basis for pricing inventories, accountants have as one important objective the proper determination of income by matching appropriate cost against revenue. Does the pricing of inventories at "cost or market, whichever is lower" conflict with that objective? Discuss fully, including consideration of the effect of the

"cost or market" rule on the usefulness of income statements and balance sheets.

3. The *J* Company and the *S* Company, engaged in the same kind of mercantile business, and owned by the same person, report for a year substantially the same amounts for sales, cost of sales, and gross profit, respectively. The *J* Company reports a merchandise turnover of 4.5 while the *S* Company reports one of 10.

(a) Explain, illustrating with an example, how such a difference might occur.

(b) Comment on the significance of the merchandise turnover in the administration and control of merchandising operations.

## Chapter V

5-1. Which of the two following concerns shows the better working capital position and why?

	Company	
	<i>M</i>	<i>N</i>
Current Assets	\$500,000	\$250,000
Current Liabilities	400,000	150,000
Net Current Assets	\$100,000	\$100,000

5-2. Compute the working capital turnover of the Busy Company for each of the two years shown below:

	<i>Last Year</i>	<i>This Year</i>
Net Sales	\$1,000,000	\$1,200,000
Current Assets	300,000	300,000
Current Liabilities	100,000	200,000

In your opinion did the change in the working capital turnovers signify an improvement? Explain.

5-3. A corporation that is liquidating has assets and liabilities as follows:

	<i>Assets</i>	<i>Liabilities</i>
Cash	\$56,000	Accounts Payable
		Notes Payable
		Dividends Payable

The dividends were declared before the company became insolvent and while there was a credit balance in surplus of \$12,000. Show how the \$56,000 of cash should be distributed.

**5-4.** The Chocolate Manufacturing Company has issued preferred stock under an agreement to maintain tangible net assets to an amount not less than 250% of the preferred stock outstanding, and also to maintain current assets at not less than 200% of the current liabilities, with the net working capital to be maintained at not less than 150% of the preferred stock outstanding. The Company submits the following Balance Sheet.

Cash	\$ 25,000
Notes & Accounts Receivable—Net	75,000
Inventories	100,000
<b>Total Current Assets</b>	<b>\$200,000</b>
Fixed Assets—Net	150,000
Good Will	50,000
<b>Total Assets</b>	<b>\$400,000</b>
Notes Payable (Current Bank Loans)	\$ 20,000
Accounts Payable	30,000
Bonds Issued	50,000
<b>Total Liabilities</b>	<b>100,000</b>
Preferred Stock	\$100,000
Common Stock	100,000
Surplus	100,000
<b>Total Proprietorship</b>	<b>\$300,000</b>

As one representing the interests of the preferred stockholders, you ascertain that the bonds were issued during the past year and that the proceeds were used to liquidate current accounts payable. Also that \$100,000 of cash was paid to banks a short time before the statement was prepared. Show by means of ratios, the condition before these transactions occurred and also at date of balance sheet. Comment briefly on your findings.

(Adapted from Wisconsin C. P. A. Exam.)

**5-5.** The Y Corporation shows the following balances in its accounts with banks:

First National	Debit Balance	\$30,000
Second National	Overdraft (Per books—not per bank statement)	8,000
Fifth National	Debit Balance	13,000
<b>Total agreeing with cash account</b>		<b>\$35,000</b>

State how you would show these balances on its balance sheet and explain why.

In what circumstances would you modify your decision?

(Adapted from A. I. A. Exam.)

**5-6.** The Galloway Company presented its balance sheet in two parts. The first part appeared as follows:

**WORKING CAPITAL SECTION**

Cash on Hand	\$ 1,432	Accounts Payable	\$116,792
Cash in Bank	18,719	Notes Payable	170,000
Cash in Sinking Fund	3,000	Reserve for Bad Debts	6,470
Inventories	175,257	Accrued Taxes	2,791
Accounts Receivable	210,867	Accrued Interest	3,127
Trade Acceptances	81,917	Accrued Wages	4,127
Notes Receivable	85,645		
Cash Surrender Value of Life Insurance	70,942		
Office Supplies	2,372		
U. S. Bonds and Other In- vestments	83,000	Working Capital	429,846
	<hr/> <u>\$733.151</u>		<hr/> <u>\$733.151</u>

You are called upon to make an analysis of the above. Upon inquiry you receive the following additional data:

1. Employee's "I O U's" amounting to \$300 have been counted as cash.
2. Checks issued to trade creditors for a total of \$7,200 have been charged against accounts payable, but have not been deducted from the bank balance.
3. The company is in the manufacturing business. It has on hand Finished Goods of \$86,427; Goods in Process, \$23,912; and Raw Materials, \$64,918; total, \$175,257, valued at cost.
4. In Accounts Receivable there are charges of \$4,200 representing goods shipped out on consignment which have not been sold. The goods were produced at a cost of \$3,600.
5. \$40,000 of Accounts Receivable have been assigned to a finance company. The Galloway Company has an equity in these of \$5,000 and has included this amount in its receivables.
6. \$25,000 of the Trade Acceptances were received from customers who were unable to pay their accounts when due.
7. The company sold \$60,000 of its Notes Receivable to the local bank, making the usual endorsement to transfer title. The company credited its Notes Receivable account by \$60,000. The bank still holds \$35,000 of these notes.
8. The company owns two \$500 Government bonds purchased at par, and 100% of the capital stock of another small manufacturing company for which it paid \$82,000.

- 9. Of the Notes Payable, \$130,000 are due to banks and \$40,000 to trade creditors..
- 10. The company has made no entry for a declared but unpaid dividend of \$50,000.
- 11. Only property taxes are included in Accrued Taxes. The estimated income taxes accrued amount to \$17,200.

In what way would the above affect the working capital section of the company's statement? Restate the corrected working capital section in approved form.

- 5-7. Calculate the "maximum line of credit" in the following cases:

	<i>Case (1)</i>	<i>Case (2)</i>
a. Minimum Current Ratio Permitted ..	4.5 to 1	3.5 to 1
Amount of Working Capital ..	\$350,000	\$1,000,000
b. Total Current Assets .. . . .	\$700,000	\$ 900,000
Total Current Liabilities .. . . .	\$400,000	\$ 300,000
Minimum Current Ratio Permitted	1.5 to 1	2.5 to 1
c. Total Current Assets .. . . .	\$500,000	\$ 400,000
Total Current Liabilities .. . . .	\$100,000	\$ 100,000
Minimum Current Ratio Permitted	1.8 to 1	2.2 to 1

- 5-8. Compute the merchandise turnover of a certain company for each of the three years shown below, and give your interpretation of the results:

	<i>Second Preceding Year</i>	<i>First Preceding Year</i>	<i>Last Fiscal Year</i>
Cost of Goods Sold .. . . .	\$516,378	\$453,740	\$648,425
Average Inventory .. . . .	236,420	301,231	539,850

- 5-9. Compute the number of days' sales uncollected for the following company for each of the three years shown. The sales invoices of the company quotes terms as, 2% / 10, n/ 30. Do the figures reveal a favorable or unfavorable trend? Explain.

	<i>Second Preceding Year</i>	<i>First Preceding Year</i>	<i>Last Fiscal Year</i>
Receivables from Customers ..	\$ 210,738	\$171,225	\$175,420
Net Sales .. . . .	1,040,092	907,372	984,642

**5-10.** Calculate the following ratios from the information shown:

Merchandise turnover.

Receivables turnover.

Acid test ratio (express as a per cent).

Working capital turnover.

Average age of receivables (in months).

	Case (1)	Case (2)
Annual Sales	\$1,000,000	\$1,200,000
Gross Profit Percentage	16%	15%
Average Merchandise Inventory	\$ 70,000	\$ 170,000
Current Liabilities	\$ 80,000	\$ 120,000
Current Ratio	250%	300%
Ending Merchandise Inventory	\$ 60,000	\$ 120,000
Ending Balance of Receivables	\$ 125,000	\$ 160,000

**5-11.** Calculate the following amounts from the information below:

Merchandise purchased during the second year.

The amount of cash received from customers in the second year.

Funds applied to the purchase of fixed assets in the second year.

	Case (1)	Case (2)
Accounts Receivable at End of First Year	\$120,000	\$145,000
Accounts Receivable at End of Second Year	95,000	160,000
Merchandise Inventory at End of First Year	70,000	90,000
Merchandise Inventory at End of Second Year	85,000	80,000
Sales for First Year	800,000	900,000
Sales for Second Year	750,000	800,000
Cost of Goods Sold for First Year	650,000	750,000
Cost of Goods Sold for Second Year	500,000	650,000
Depreciation Expense for First Year	10,000	15,000
Depreciation Expense for Second Year	13,000	19,000
Fixed Assets Less Depreciation End of First Year	40,000	50,000
Fixed Assets Less Depreciation End of Second Year	70,000	90,000

**5-12.** 1. If R Co. Current Ratio is  $4\frac{1}{2}$  to 1, Acid Test Ratio is 3 to 1, Merchandise Inventory is \$30,000, what are Total Current Liabilities?

2. If Q Co. Total Current Liabilities are \$50,000, Acid Test Ratio is 3 to 1, Merchandise Inventory is \$25,000, what are Total Current Assets?

3. If A Co. Merchandise Inventory is \$30,000, Total Current Liabilities are \$60,000, Acid Test Ratio is 2 to 1, what is Current Ratio?

4. If X Co. Acid Test Ratio is  $2\frac{1}{2}$  to 1, Merchandise Inventory is \$60,000, Current Ratio is 4 to 1, what are Total Current Liabilities?

5. If Y Co. Current Ratio is 3.5 to 1 and Acid Test Ratio is 1.2 to 1, what is the amount of the Merchandise Inventory when Current Liabilities total \$30,000?

6. Freedom, Incorporated, has for a certain year net sales which are  $3\frac{1}{2}$  times the equity capital invested in the company. The operating ratio is 96%. What is the rate of return on equity capital invested?

## Chapter VI

**6-1.** The following appeared in the annual report of the Arnco Steel Corporation. It is the type of schedule that is seldom included in published annual reports but is frequently included in accountants' audit reports to companies.

### PROPERTY, PLANT, AND EQUIPMENT AND RELATED RESERVES

	<i>Balance January 1, 1950</i>		<i>Balance December 31, 1950</i>	
	<i>Additions</i>	<i>Deductions</i>		
<b>PROPERTY, PLANT, AND EQUIPMENT—at cost:</b>				
Land	\$ 5,498,181	\$ 29,014	\$ 6,425	\$ 5,520,770
Leaseholds	681,910	1,211,918	—	1,893,828
Buildings and Structures	75,157,141	3,915,137	112,784	78,959,494
Machinery and Equipment	149,101,753	18,117,882	1,948,626	165,271,009
Furniture and Fixtures	2,472,092	199,458	93,364	2,578,186
Automotive Equipment	1,942,042	536,374	268,782	2,209,634
Land, Dwellings, etc. Held for Resale or Rental to Employees	1,529,363	33,846	140,144	1,423,065
Construction in Progress	8,339,521	8,601,884	—	16,941,405
<b>TOTAL</b>	<b>\$244,722,003</b>	<b>\$32,645,513</b>	<b>\$2,570,125</b>	<b>\$274,797,391</b>
<b>RESERVES FOR DEPRECIATION AND DEPLETION:</b>				
Depletion	\$ 159,486	\$ 39,309	—	\$ 198,795
Buildings and Structures	30,557,757	2,697,303	\$ 71,607	33,183,453
Machinery and Equipment	67,825,025	7,784,055	1,856,061	73,753,019
Furniture and Fixtures	1,473,300	167,638	87,459	1,553,479
Automotive Equipment	1,097,277	398,424	217,991	1,277,710
Land, Dwellings, etc. Held for Resale or Rental to Employees	752,678	52,639	17,804	787,513
<b>TOTAL</b>	<b>\$101,865,523</b>	<b>\$11,139,568</b>	<b>\$2,250,922</b>	<b>\$110,753,969</b>
<b>PROPERTY, PLANT, AND EQUIPMENT—Net</b>				
				<b>\$164,043,422</b>

1. Describe briefly the use and value of such a schedule.
2. How much were the net capital expenditures for the year?
3. What probably accounts for the deductions?
4. What would account for all or the major part of the additions to reserves?
5. Was depreciation computed on construction in progress?

**6-2.** "Accountants advocating reform have generally discarded, because of its vulnerability, the argument that the depreciation provisions should provide for the replacement of plant and equipment. Since the counter arguments are so well known, we shall just briefly mention them here: that if replacement cost is important, it is the cost of replacing the equivalent service and not the same physical equipment that should be considered; that since most of the replacements will not be made until many years have elapsed, we do not know what the cost will be; that replacement is not a function of depreciation but of entire revenue and of investors' decisions."

*The Accounting Review, October, 1949, p. 363.*

Enlarge on the arguments mentioned above, explaining in your own words the meaning of each.

**6-3.** The following were taken from a description in verse of the balance sheet statement:

"Fixed assets are valued according to cost,  
But you have to settle their worth.  
Is it more? Is it less? We leave you to guess,  
If you can—can you value the Earth?"

"One asset is omitted—and its worth I want to know,  
That asset is the value of the men who run the show!"

Do these lines reveal some limitations of the average balance sheet?

**6-4.** Mr. Ward has offered to purchase Mr. Long's business at its present worth plus three years' net earnings and Mr. Long has accepted. Long has on his books "Good Will," "Merchandise Inventory (at cost before deducting the usual discount)," "Organization Expense," and "Discount on Bonds Sold," which Ward claims should be adjusted before present worth is computed.

Also, Long has excluded from his computation of net income "Interest on Notes and Accounts Payable," and "Cost of Successful Suit to Defend Patent" on the ground that they are not part of the usual operating expenses and so should not be considered in a transaction of this kind. To this Ward also objects.

You are asked to settle the questions and they have agreed to abide by your decision. State your recommendations.

(Wisconsin C. P. A. Exam.)

**6-5.** From the data presented below compute the value per share of the common stock using an old method that the Bureau of Internal Revenue has quite consistently followed (lower rates of return have been used for nonlazardous businesses) and that has been stated as follows:

"Allow out of average earnings over a period of years—preferably not less than five years, a return of 10 per cent upon the average tangible assets for the period. The surplus earnings will then be the average amount available for return upon the value of the intangible assets, and it is the opinion of the Committee that this return should be capitalized upon the basis of not more than five years' purchase—that is to say, five times the amount available as return from intangibles should be the value of the intangibles." Cumulative Bulletin, No. 2, 1920, p. 32.

Average Net Income		\$ 46,294.67
Average Total of Common Stock and Surplus		298,717.21
Present Total of Common Stock and Surplus		456,965.21
Intangible Assets Carried on Books of Account for Many Years without Change		141,609.56
Annual Preferred Dividends		7,500.00
Number of Shares of Common Stock		800

**6-6.** Calculate the theoretical amount of Good Will for the following:

	Case (1)	Case (2)
Actual Average Annual Earnings	\$ 28,500	\$ 38,600
Invested Capital of Common Stockholders	300,000	350,000
Rate on Invested Capital Used to Get Normal Earnings	8%	10%
Rate Used to Capitalize Excess Earnings	15%	18%

**6-7. (a)** A certain company showed in its income statement net earnings of over \$14,000,000, from which was deducted an appropriation of \$3,000,000 for anticipated high-cost additions to fixed assets, leaving a remaining amount of \$11,000,000. In the letter of the Presi-

dent to the stockholders, the earnings per share were based on \$11,-000,000. What comment have you to make?

(b) Contrast the foregoing with the way in which one company explained its' current earnings as follows:

"Unless fully understood this appears to be a large increase. In fact, however, because of the effect of inflation, the figures though arithmetically correct require interpretation. For example, depreciation reserves, based as they are on original costs of plant, are grossly inadequate to replace that plant at today's costs."

## Chapter VII

**7-1.** The net worth section of the Ardo Corporation's balance sheet shows the following items:

Capital Stock		\$400,000	
Less: In Treasury		50,000	\$350,000
Surplus			220,000
			\$570,000

Upon investigation the following facts are found:

1. The company is authorized to issue 5,000 shares of stock with a par value of \$100 per share.
2. The total premium on stock sold amounted to \$50,000.
3. The company, on the basis of appraisal figures, wrote up its fixed assets \$80,000 and credited that amount to the surplus account.
4. The company acquired 500 shares of its own capital stock at a cost of \$40,000.
5. The company was incorporated and transacts its business in a state which by statute provides that a corporation shall not purchase its own shares

...when its net assets are less than the sum of its stated capital, its paid-in surplus, any surplus arising from unrealized appreciation in value or revaluation of its assets and any surplus arising from surrender to the corporation of any of its shares, or when by doing so its net assets would be reduced below such sum....

In what way would you present the net worth section of the company's balance sheet in order to give more complete information?

**7-2.** Comment on the practice of reducing the amount of Capital Stock Outstanding, thus creating a Capital Surplus, and then writing down the assets against such surplus. Assuming that the assets written down remain in the possession of the company and were previously carried at actual cost, indicate in your comments the immediate and the ultimate effect of such revision of capital structure.

(Wisconsin C. P. A. Exam.)

**7-3.** The *A B* Public Utility Corporation requires \$5,000,000 of additional capital on which it expects to earn a return of 5% per annum. The management is considering two ways of raising the money. One is by selling common stock only, and the other by issuing the following securities:

Bonds	\$2,500,000 at 4%
Preferred Stock	1,500,000 at 5%
Common Stock	1,000,000

Compare the rate of return to common stockholders under the two plans. What term is commonly applied to the position of the common stockholder under a capitalization similar to the second plan above, and what are the advantages and disadvantages of such a position?

**7-4.** Calculate the turnover of net worth for each company below:

	Company X	Company Y
Net Sales	\$1,000,000	\$1,200,000
Total Assets	500,000	700,000
Total Liabilities	100,000	500,000

Does the higher turnover show which company used its assets with the greater efficiency? Explain.

**7-5.** (a) A stockholder who owns some stock in a listed corporation is concerned because she receives such small dividends. She has reviewed the last stockholders' report and has concluded there is ample cash available for much larger dividends. In addition to cash in banks, the corporation's balance sheet shows the following items which she believes represent cash funds:

1. A large "Paid-In Surplus."
2. Plenty of "Undivided Profits."
3. A large "Reserve for General Contingencies."
4. A substantial "Reserve for Depreciation."

In simple, nontechnical language, explain the nature of the items which the stockholder has confused with cash.

(b) The stockholder is further perturbed because the corporation's most recent balance sheet shows Good Will at only \$500,000, whereas a year before it had been shown at \$1,000,000. She believes that a corporation which is losing good will so rapidly must be poorly managed.

In simple, nontechnical language, write an explanation which should clear up the stockholder's misunderstanding.

(A I A. Exam.)

**7-6.** The following are excerpts from the remarks of the Chairman of the Board and President of the Tri-Continental Corporation (an investment company) before The New York Society of Security Analysts, September 18, 1951:

"Tri-Continental's most unusual feature is its capital structure . . ."

"Tri-Continental has about \$17,000,000 of debenture bonds with an average annual interest cost of 2.89% . . ."

"Tri-Continental has outstanding about \$38,000,000 of \$6 cumulative preferred stock, callable at 110. This preferred plus the debentures furnish the pyramid and, thus, the leverage of Tri-Continental's capital structure . . ."

"The common currently has a balance sheet value, for what that is worth, of about \$21 a share. That is after deducting a reserve for possible taxes on unrealized security appreciation of about \$4. In other words, there are about \$25 of assets plus the capital pyramid working for each share of stock. Compare this \$25 with the current market price of 14½ and you see one of the reasons why I think Tri-Continental common is an interesting security. The significance of the difference between asset and market values from the standpoint of income and yield is obvious. From the standpoint of possible appreciation, it provides a rough measure of potential . . ."

"The common stock has a character quite different from that of an investment company with no senior securities outstanding. With the senior claim on assets of the debentures and preferred stock fixed at stated amounts, any change in the market value of Tri-Continental's assets results in a proportionately larger change in the asset value of the common. This works on both the upside and downside. With the senior claim on income of the debentures and preferred stock also fixed at stated rates, any change in portfolio income has a similar effect on the amount of income flowing to the common. It is our policy to pay out in dividends to shareholders substantially all of our net income from interest and dividends."

1. The September 30, 1951, balance sheet of the company showed 3,944,342 shares of common stock issued. Compute their value at \$21 a share. What per cent change in this value would result if the net assets represented by the capital structure described above increased 10%?  
2. Compute the asset coverages of the debentures and the preferred stock. State in terms of dollars of assets for each dollar of debentures or preferred stock.

7-7. (a) The book value of Ideal Company's common stock is \$143.00 per share before a 10% stock dividend declared and paid in January. What is the book value per share after such dividend?

(b) The company then earns a 20% net profit on the book value of the common outstanding after such 10% stock dividend. What is the book value per share (no preferred stock being outstanding)?

(c) The company then declares and distributes a 50% stock dividend. Now what is the book value per share of the stock?

7-8. What is the *book value per share of common stock* outstanding in each of the following situations? In each case before dividends there are \$2,000,000 of \$100 par, cumulative, nonparticipating preferred stock outstanding, on which the current year's dividends requirements have already been met, and \$3,000,000 of Earned Surplus Unappropriated.

(a) Common stock, outstanding 600,000 shares, \$10.00 par value each, before any dividends.

(b) After a 50% stock dividend to common stockholders in common stock has been declared and distributed.

(c) In place of (b), after a 20% cash dividend to common has been declared and distributed.

(d) In place of (b) and (c), after a "three-for-two" common stock split.

(e) In place of (b), (c), and (d), after a 50% stock dividend to common stockholders in *preferred* stock has been declared and distributed

## Chapter VIII

8-1.

## ALLIS-CHALMERS MANUFACTURING COMPANY

## CAPITAL GROWTH (TEN YEARS)

Source of Capital	1940	1950	Use of Capital	1940	1950
Borrowed Money ..	\$ 25,321,500	\$ 33,000,000	Cash and Securities	\$ 6,788,500	\$ 56,846,936
Owed to Others ..	15,612,450	42,849,459	Accounts and Notes Receivable	24,775,329	50,439,120
Preferred Stock ..	.....	35,916,000	Inventories	35,338,629	97,109,488
Common Stock ..	54,965,043	72,759,877	Land, Buildings, Equipment and Miscellaneous Assets	26,196,369	55,674,094
Earned Surplus ..	18,132,793	66,774,671	Patterns, Drawings, and Good Will	20,932,959	1
	<u>\$114,031,786</u>	<u>\$251,300,007</u>		<u>\$114,031,786</u>	<u>\$250,069,589</u>
			Less—Progress Billings and Advance Collections	.....	8,769,582
				<u>\$114,031,786</u>	<u>\$251,300,007</u>

- What is the title of the statement commonly used to show the data presented above?
- Point out the unusual features of the statement shown.
- What do the total figures indicate?
- What were the principal sources of increased capital?
- What is the nature of progress billings and advance collections?
- What probably accounted for the reduction in value of "Patterns, Drawings, and Good Will"?

8-2. The Puzzle Manufacturing Company presents the following balance sheet together with the other facts herein below stated.

Cash .....	\$426,000
Notes and Accounts Receivable—Net .....	254,000
Inventories .....	471,581
Fixed Assets — Net .....	930,251
Prepaid Expenses .....	7,168
Total Assets .....	<u>\$2,089,000</u>
Notes and Accounts Payable .....	\$218,000

Bonds Issued		\$500,000
Accrued Taxes, etc.		21,000
Total Liabilities		\$ 739,000
Common Stock (100 Par)		\$650,000
Surplus		700,000
Total Proprietary Interest		<u>\$1,350,000</u>

Net profit of \$162,800 earned during the year just closed is included in the above Surplus. Normal profits average \$80,000 annually.

The directors are undecided as to whether they should declare a 10% cash dividend or a 10% stock dividend and have asked you to explain the immediate and the ultimate effect of each action so they may act intelligently.

- (a) Show the immediate effects of each action by giving the new balances of all accounts changed.
- (b) State the book value per share of stock in each case.
- (c) State the long-time advantages and disadvantages of each plan.

(Adapted from Wisconsin C. P. A. Exam.)

**8-3.** The following information was reported by the A Corporation:

<i>Operations</i>	<i>First Year</i>	<i>Second Year</i>
Total Sales	\$520,000	\$491,000
Returns and Allowances	30,000	61,000
Net Sales	\$490,000	\$430,000
Cost of Goods Sold	392,000	387,000
Gross Margin	\$ 98,000	\$ 43,000
Selling Expenses	7,840	4,300
Depreciation	6,000	7,000
Other Expenses	87,100	78,000
Net Loss	<u>\$ 2,940</u>	<u>\$ 46,300</u>

<i>Assets</i> <i>December 31</i>		
Cash on Hand and in Banks	\$ 36,000	\$ 20,000
Accounts Receivable	150,000	300,000
Goods on Hand	50,000	120,000
Prepaid Advertising	1,600	800
Unexpired Insurance	400	1,200
Land	16,000	16,000
Building (Less Depr. Res.)	50,000	88,000
Total Assets	\$304,000	<u>\$546,000</u>

<i>Liabilities and Capital December 31</i>	<i>First Year</i>	<i>Second Year</i>
Accounts Payable	\$ 15,800	\$140,000
Owed to Banks	4,900	10,000
Mortgage Bonds	20,000	50,000
Capital Stock	210,000	376,000
Surplus	53,300	30,000 (Dr. Bal.)
Totals	<u>\$304,000</u>	<u>\$546,000</u>

A dividend of \$37,000 was distributed on January 10 of the second year to stockholders of record as of the previous December 31.

On a sheet of paper write down the figures appearing in parentheses and to the right of each place the amount or other information called for.

### THE A CORPORATION

#### STATEMENT OF NEW ASSETS RECEIVED AND THEIR APPLICATION During the Second Year

##### Assets Provided

By Issue of Bonds	(1)
By Sale of Stock	<u>(2)</u> (3)

##### Assets Applied

Purchase of Fixed Assets	(4)
Dividends Paid	<u>(5)</u>
Lost on Operations	(6)
Charges Not Requiring Cash Outlay	<u>(7)</u> (6) & (7) net <u>(8)</u>
Increase in Working Capital	<u>(9)</u>

The ratio of current assets to current liabilities at the end of the first year was approximately (10) to 1.

A year later the ratio was about (11) to 1.

The trend is clearly shown to be (12) (favorable) (unfavorable)

At the end of the first year there were approximately (13) months' net sales uncollected compared with (14) months' a year later, indicating that credit and collection methods have been (15) (efficient) • (inefficient)

The amount of cash received from customers in the second year was (16)

Merchandise purchased during the second year amounted (17) to

The payment of the dividend was (18) (legal) (illegal) because (19)

General conclusions as to the management of the company are  
\* (20)

**8-4.** The following statement appeared in the annual report of the National Biscuit Company:

CHANGES IN CONSOLIDATED WORKING CAPITAL

(All Amounts Are Expressed in Thousands of Dollars)

RECEIVED FROM:	1950	1949	1948	1947	1946
Sales of Product	\$269,409	\$294,420	\$296,250	\$263,894	\$220,195
Interest and Miscellaneous					
Income (Net)	402	371	1,675	327	2,818
	<u>\$296,811</u>	<u>\$294,791</u>	<u>\$297,925</u>	<u>\$264,221</u>	<u>\$223,013</u>
USED FOR:					
All purposes except Plant:					
Operating Costs and Expenses	\$244,881	\$247,795	\$252,544	\$217,615	\$183,996
Taxes	24,326	19,681	18,439	19,874	15,739
Dividends	14,315	14,315	14,315	14,315	9,283
Other (Net)	509	1,383	263	45	24
	<u>\$283,013</u>	<u>\$280,408</u>	<u>\$285,561</u>	<u>\$251,849</u>	<u>\$208,994</u>
Excess Funds provided	\$ 13,798	\$ 14,383	\$ 12,364	\$ 12,372	\$ 14,019
Used for Plant and Equipment	12,173	20,287	16,792	6,964	3,369
Increase or decrease in working capital	<u>\$ 1,625</u>	<u>\$ 5,904</u>	<u>\$ 4,428</u>	<u>\$ 5,408</u>	<u>\$ 10,650</u>

- What is the traditional title of this statement?
- In what respects does the statement differ from the traditional form?
- Are all costs and expenses included in the "Used For" section of the statement?

**8-5.** Summarize in conventional statement form the data presented below and point out the differences revealed thereby:

BEATRICE FOODS CO.,

The following tabulation shows the disposition of earnings retained in the business for the last fiscal year and added to working capital:

Net Profit (after provision of \$4,440,000 for Federal taxes on income)	\$4,819,967
---	-------------

Less: Dividends Paid to Preferred and Common Stockholders .....	\$ 2,740,202
Earnings Retained in the Business for the Year .....	<u>\$ 2,079,765</u>
<b>Expended for Additions to Properties:</b>	
Total Cost of Additions to Properties Including Expansion of Operations into New Territories .....	\$ 2,763,086
Amount Provided by Depreciation .....	1,817,531
Net Increase in Property Investment .....	\$ 945,555
Increase in Working Capital, \$1,764,506, Less Increase in Deferred Income, etc., \$30,296	\$1,734,210
Deduct: Excess Provision for Federal Income Taxes in Prior Years Returned to Earned Surplus .....	600,000
Total Retained in the Business .....	<u>\$ 2,079,765</u>

**8-6.** The following information was furnished in the annual report of the General Foods Corporation:

Our increased sales last year, plus the higher costs of doing business in an inflationary period, required an investment of many more dollars in the business than ever before.

These funds came from the following sources:

- We retained \$12.7 million of our earnings, or about 48 per cent.
- We obtained short-term loans amounting to \$14 million.
- We used \$5.5 million of our cash balances.
- Our payables increased \$20.2 million.
- Depreciation allowances provided \$5.7 million.
- And we received \$1.3 million from the sale of assets.

Here's how we used the money:

About \$32.4 million went to pay the increased cost of our inventories. This increase was due largely to the higher prices we had to pay for the commodities used in our operations.

We spent \$14.4 million for new plant facilities. Here, too, inflation was at work. A number of machines and plant facilities had to be replaced by new, more efficient equipment. While allowances had been made for depreciation, they were far from enough to offset the higher cost of replacing the equipment.

About \$1.2 million were used to pay back long-term loans.

The remaining \$11.4 million were used to finance higher accounts receivable. Normally, customers need approximately two weeks to pay for their purchases. As our sales increased, the amount of money our customers owed us also increased.

Redraft the data in the traditional form of statement showing the increase or decrease in working capital in one amount supported by a separate schedule. Dividends paid during the year amounted to \$13.7 million.

**8-7.** On a separate sheet of paper write the numbers and column headings shown below. Using this form for each case, fill in the appropriate amounts. Write "None" in all spaces requiring no amounts.

	Source of Funds	Application of Funds
1. Net Profit per Operating Statement . . . . .	\$ .....	\$ .....
2. Net Loss per Operating Statement . . . . .	.....	.....
3. Non-Fund Charges in Operations—Depreciation . . . . .	.....	.....
4. Net Increase in Net Current Assets . . . . .	.....	.....
5. Purchase of Buildings and Equipment . . . . .	.....	.....
6. Purchase of Land . . . . .	.....	.....
7. Payment of Cash Dividends . . . . .	.....	.....
8. Sale of Capital Stock . . . . .	.....	.....
9. Sale of Land . . . . .	.....	.....
10. Sale of Buildings and Equipment . . . . .	.....	.....
11. Net Decrease in Net Current Assets . . . . .	.....	.....
12. Retirement of Bonds Payable . . . . .	.....	.....
13. Issuance of Bonds Payable . . . . .	.....	.....
<b>Totals</b> . . . . .	<b>\$ _____</b>	<b>\$ _____</b>

*Data for Case (1):*

Assets:	<i>January 1</i>	<i>December 31</i>
Cash . . . . .	\$ 15,000	\$ 8,000
Receivables (Net) . . . . .	25,000	22,000
Inventories . . . . .	23,000	25,000
Buildings and Equipment (Net) . . . . .	52,000	45,000
Land . . . . .	20,000	26,000
<b>Total Assets</b> . . . . .	<b>\$135,000</b>	<b>\$126,000</b>

*Equities:*

Current Liabilities . . . . .	\$ 25,000	\$ 20,000
Bonds Payable . . . . .	30,000	35,000
Capital Stock . . . . .	50,000	62,000
Earned Surplus Unappropriated . . . . .	30,000	9,000
<b>Total Equities</b> . . . . .	<b>\$135,000</b>	<b>\$126,000</b>

*Selected Operating Items:* Gross Profit \$50,000, Depreciation \$5,000, All Other Expenses \$58,000, Total Dividends, Including 10% Stock Dividend, \$8,000.

*Data for Case (2):*

Assets:	<i>January 1</i>	<i>December 31</i>
Cash . . . . .	\$ 10,000	\$ 17,000
Receivables (Net) . . . . .	20,000	35,000
Inventories . . . . .	30,000	25,000
Buildings and Equipment (Net) . . . . .	50,000	49,000
Land . . . . .	40,000	36,000
<b>Total Assets</b> . . . . .	<b>\$150,000</b>	<b>\$162,000</b>

*Equities*

Current Liabilities	\$ 25 000	\$ 30 000
Bonds Payable	50 000	15 000
Capital Stock	40 000	55 000
Earned Surplus Unappropriated	35 000	32 000
Total Equities	\$150 000	\$162 000

*Selecting Operating Items.* Gross Profit \$90 000. Debt Retirement \$1 000. all other Expenses \$75 000. Total Dividend Including 20% Stock Dividend \$14 000

## Chapter IX

**9-1.** The Hawley Company began business ten years ago. Each year 3% of credit sales has been credited to a Reserve for Bad Debts. The following facts are shown by the books of the company:

Year	Sale on Credit	Am. of Bad Debts
First	\$125 000	\$3 100
Second	150 000	3 500
Third	225 000	4 100
Fourth	310 000	6 000

Does the period of addition to the Reserve for Bad Debt appear reasonable?

**9-2.** The following officer owns all of the stock of the Bunge Corporation. Each devotes his entire time to the business and receives the compensation indicated:

Name	Official Title	Size Owned	Salary
C. R. Andrews	Pres	175	\$35 000
T. A. Brunsch	Vice Pres	125	25 000
R. M. Campbell	Sec	110	28 000
L. O. Andrews	Diras	60	12 000

The company reports a net profit of \$67 000 for the past year. Would you question this figure? Explain.

**9-3.** M., a wholesale dealer in heavy merchandise, is unable to reconcile the percentage of net profits as shown by his annual accounts, with the percentages arbitrarily added to cost prices, and asks your assistance in an effort to ascertain the reason therefor.

You investigate and find, first, that effective precautions are taken against theft of material and funds, and that there are adequate checks against shipping merchandise unbilled.

You then obtain the following information from the books of account and the records:

(1) Twenty-five per cent has been added to cost prices in order to obtain an average gross profit of 20% on sales.

(2) Expenses are estimated to amount to a total of 9% on sales, namely, 1% selling, 1½% office, 3½% delivery, 2% general, and 1% executive salaries.

(3) The accounts for the last completed year showed the following:

Net Sales . . . . .	\$3,490,000
Cost of Sales . . . . .	2,980,000
Gross Profit . . . . .	<u>\$ 510,000</u>
 Expenses:	
Selling . . . . .	\$ 33,600
Delivery . . . . .	232,100
Office . . . . .	47,300
General . . . . .	69,000
Executive . . . . .	35,000
	417,000
Net Profit . . . . .	<u>\$ 93,000</u>

(4) An analysis of the net sales for an average month during the year gives the following details, each invoice representing a separate delivery to a customer:

Sales:		Numbers of Invoices	Amount of Sales
Under \$ 6	. . . . .	1,020	\$ 2,648
From 6 to \$ 10	. . . . .	324	2,679
" 10 " 20	. . . . .	428	6,174
" 20 " 50	. . . . .	583	19,440
" 50 " 100	. . . . .	667	52,630
" 100 " 200	. . . . .	781	102,475
" 200 " 300	. . . . .	225	55,210
Over 300	. . . . .	112	47,000
Average for One Month During the Year . . . . .		<u>4,140</u>	<u>\$288,256</u>

Prepare a statement accounting, as far as possible, for the difference between the estimated and the actual profits, giving the main facts, but avoiding unnecessary details, and indicating what should be done to obtain better operating results.

(Adapted from A. I. A. Exam.)

**9-4.** The Doehler-Jarvis Corporation presented graphic sales dollars in their annual report which were supported by the following figures:

	1950	%	1949	%
<b>TOTAL INCOME FROM SALES . . . . .</b>	<b>\$83,307,486.</b>	<b>100.00</b>	<b>\$65,019,856.</b>	<b>100.00</b>
<i>Used as Follows:</i>				
Compensation to Employees (Exclusive of Officers) . . . . .	36,786,030.	44.16	29,331,882	45.11
Compensation to Officers . . . . .	964,194.	1.16	845,436.	1.30
Materials Purchased, Services, etc.	30,924,087.	37.12	24,865,137.	38.24
Wear and Exhaustion of Plants and Equipment . . . . .	1,059,430.	1.27	1,047,550.	1.61
Federal Taxes on Income . . . . .	5,490,000.	6.59	2,525,000.	3.88
Social Security, State and Local Taxes . . . . .	1,115,174.	1.34	629,747.	.97
Dividends to Stockholders . . . . .	2,669,105.	3.20	2,669,105.	4.11
<i>Net Income Retained in Business:</i>				
Expenditure for Plant Construction, Equipment, etc. . . . .	3,490,036.	4.19	965,906.*	1.49
For Additional Working Capital and Adjustments to Reserve for Contingencies . . . . .	809,430.	97	2,140,003	3.29

\* Does not include assets acquired in exchange for 25,000 shares of common stock of Doehler-Jarvis Corporation which stock had an aggregate current market value of approximately \$759,375.00 at the date of acquisition of the assets.

1. What term is frequently applied to a percentage statement of this type?
2. Is it possible to determine from the statement whether or not the cost of goods sold changed proportionately with the change in sales?
3. Which expenses increased at a greater rate than sales?
4. Is the compensation paid to officers usually shown in published statements?
5. What was the net income for each year?
6. What item changed percentagewise but not in dollar amount? Does this illustrate the value of showing both amounts and per cents?
7. Why are the assets described in the footnote excluded from the statement?

**9-5.** "At the close of 1950 we adopted the last-in, first-out (LIFO) method of computing the cost of certain commodities used in our production. This reduced the profits before taxes for the year by \$1.2 million. After taxes this was equivalent to eight cents per share of common stock. We believe it advisable to adopt the most realistic basis possible in relating current costs to current income."

1. Explain how the LIFO method relates current costs to current income.
2. What effect does the LIFO method have on profits (a) in periods of rising prices, and (b) in periods of decreasing prices?
3. Is it good accounting practice to relate current costs to current income under the LIFO basis?

**9-6.** The auditors' certificate in a certain report read in part as follows:

"The accounting policies of the corporation are consistent with those of the preceding year except for certain changes in depreciation policies to which we do not take exception. The major change is the adoption with respect to postwar additions to facilities of a policy of accelerated depreciation on cost in the early years when the economic usefulness of the facilities is greatest."

- Is accelerated depreciation the same as depreciation on replacement prices? Explain.

**9-7.** One substitute for the conventional income statement, that has been proposed, consists of the following seven items.

	<i>Amount</i>	<i>%</i>	<i>Average per Worker</i>
Receipts from Customers			
Cost of Goods and Services Bought from Others			
Cost of Human Energy (Wages, Salaries, etc.)			
Cost of Tools Wearing Out (Depreciation, Depletion, etc.)			
Cost of Payments Ordered by the Government (Taxes)			
Cost of Using the Tools (Profit)			

Do you believe the above would be adequate as a substitute statement? Explain.

**9-8.** "Profits are being stated in terms of the current inflated dollar. Because of increased sales prices, margins of profit are larger, not so much in percentage but in dollars--inflated dollars. Yet the net worth or capital upon which statistical percentages are figured is stated, to a very large extent though not completely, in terms of a higher value dollar."

—*The Journal of Accountancy*, November, 1948, p. 363.

What solution do you suggest for the problem indicated?

## Chapter X

**10-1.** Two companies, *M* and *N*, have the same net worth and have had the same average profits for the past four years as is indicated below:

Year	Net Profits	
	Co. M	Co. N
First	\$112,000	\$150,100
Second	121,300	142,700
Third	134,500	121,200
Fourth	146,700*	100,500
Total Profits	<u>\$514,500</u>	<u>\$514,500</u>

State which of the two concerns has the greater good will, if any, and give your reason.

**10-2.** A public utility company has outstanding general mortgage bonds and debentures on which the annual interest requirements are \$400,000 and \$200,000 respectively. Its last annual report shows earnings for the year of \$800,000 after deducting all expenses except the above interest.

*A, B, and C* are interested in the company and have calculated the number of times the interest is covered by the earnings, but with varying results.

*A* says that the general mortgage interest was earned 2 times and the debenture interest 2 times.

*B* is in agreement with *A* as far as the mortgage interest is concerned, but he believes that the coverage on the debenture interest is  $1\frac{1}{3}$  times.

*C*, however, maintains that the coverage on both obligations should be stated the same, i.e.,  $1\frac{1}{3}$  times.

Account for the different results obtained and give reasons for agreeing or not agreeing with each. In your opinion is the interest coverage satisfactory for a public utility?

**10-3.** A corporation has been in business for many years and both business and plant facilities have been continually expanded. It has regularly made good profits and accumulated a large surplus that is shown without explanation on the balance sheet as a single item.

At an annual meeting the stockholders complain that their dividends have not been commensurate with the prosperity of the cor-

poration as shown by the annual statements, and the president explains vaguely that although most of the surplus is legally available for dividends, there are practical reasons why it cannot be distributed at the present time.

Assuming that the president's explanation is correct, state some possible reasons why the surplus cannot be distributed.

(Adapted from A.I.A. Exam.)

**10-4.** Prepare a statement from the following information taken from a corporation's books that will show the rate of earnings on the par value of the common stock:

Nonparticipating 5% Preferred Stock Authorized	\$100,000.00
Preferred Stock Unissued	60,000.00
Common Stock Issued	110,000.00
Treasury Stock Common	35,000.00
Surplus at the Beginning of the Year	32,872.00
Dividends Paid at the Beginning of the Year	6,900.00
Earnings for the Period	16,500.00

**10-5.** The following comparative balance sheets and income accounts of the *A B* Company are submitted to you for scrutiny and comment.

Reporting thereupon, what points would you consider of most importance for the attention of the management? State how you would emphasize these in your report. Suggest any changes in policy or remedies for existing conditions that appear desirable. What additional information would you require before rendering your report? Do any essential facts appear to have been omitted?

**THE *A B* COMPANY**  
**COMPARATIVE BALANCE SHEETS**

December 31

	<i>Assets</i>	<i>Last Year</i>	<i>Year Ago</i>
<b>Fixed:</b>			
Buildings (cost)	\$1,100,000	\$1,100,000	\$1,100,000
Plant and Machinery (cost) . .	1,750,000	1,500,000	2,500,000
	\$2,850,000	\$2,500,000	\$2,500,000
<b>Deferred:</b>			
Experimental Work	500,000	100,000	100,000

**PROBLEMS**

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<b>Current:</b>	<b>Assets</b>	<b>Last Year</b>	<b>Year Ago</b>
<b>Inventories—</b>			
Raw Materials	\$ 500,000	\$ 400,000	
Finished Goods	275,000	250,000	
Supplies	60,000	50,000	
Accounts Receivable, Trade	900,000	1,000,000	
Accounts Receivable, Officers	80,000	20,000	
Cash	200,000	300,000	
		\$2,015,000	\$2,020,000
		<u>\$5,365,000</u>	<u>\$4,620,000</u>
<b>Liabilities</b>			
Capital Stock		\$2,000,000	\$2,000,000
<b>Current:</b>			
Notes Payable to Banks	\$1,000,000	\$ 500,000	
Accounts Payable, Trade	615,000	620,000	
Dividends Payable	100,000		
		1,715,000	1,120,000
<b>Surplus:</b>			
Balance	\$1,500,000		\$1,500,000
Income for Year	250,000		
		1,750,000	
Less Dividend	100,000		
		1,650,000	
		<u>\$5,365,000</u>	<u>\$4,620,000</u>

**COMPARATIVE INCOME ACCOUNTS**

	<b>Last Year</b>	<b>Year Ago</b>
Sales	\$9,000,000	\$8,000,000
Cost of Sales.		
Raw Materials:		
Inventories, Beginning of Years	\$ 400,000	\$ 300,000
Purchases	4,80,000	3,850,000
Inventories, End of Years	<u>5,20,000</u>	<u>4,150,000</u>
Direct Labor	500,000	400,000
Factory Overhead, Including Supplies	4,750,000	3,750,000
Manufacturing Profit	2,200,000	2,000,000
Selling Expenses	1,550,000	1,800,000
General and Administrative Expenses	8,500,000	7,550,000
Net Income	500,000	450,000
	162,000	144,000
	88,000	106,000
	250,000	250,000
	<u>\$ 250,000</u>	<u>\$ 200,000</u>

(Adapted from A. I. A. Exam.)

**10-6.** From the following selected financial data for the Equity Enterprise Company calculate the following (Ignore income taxes and use preferred method.):

- (1) Number of times interest has been earned on the *first* mortgage bonds.
- (2) Number of times interest has been earned on the *second* mortgage bonds.
- (3) Number of times the preferred dividend has been earned (when combined with interest charges.)
- (4) Earnings available for common stock, per share.

Data:

Annual Net Profit ( <i>after</i> bond interest)		\$135,000
5% First Mortgage Bonds Outstanding		\$600,000
6% Second Mortgage Bonds Outstanding		\$250,000
7% Cumulative, Nonparticipating Preferred Stock		
Outstanding (no dividends in arrears)		\$500,000
Common Stock Outstanding, \$10.00 Par per Share		\$400,000

**10-7.** Calculate the number of times the interest and dividend requirements on the following securities have been earned (Ignore income taxes and use preferred method.):

	<i>Case (1)</i>	<i>Case (2)</i>
Net Profit <i>Before</i> Bond Interest,		
Debenture Interest, and Dividends	\$1,120,000	\$840,000
Mortgage Bonds, 5%, Par	\$4 million	\$2 million
Debentures, 6%, Par	\$2 million	\$3 million
Preferred Stock, 8%, Par	\$3 million	\$4 million

**10-8.** What rate of return on total assets must A Corporation earn before interest and dividends in order to make available to common stock (Ignore income tax.):

- (a) a 5% rate of earnings on par after interest and preferred dividends?
- (b) a 10% rate of earnings on par after interest and preferred dividends?
- (c) a zero rate of earnings on par after interest and preferred dividends?

	<i>Case (1)</i>	<i>Case (2)</i>
Total Assets	\$8,000,000	\$8,000,000
Current Liabilities (none)		
Fixed Liabilities (5% interest)	2,000,000	3,000,000
Preferred Stock (6%, nonpartic.)	4,000,000	2,000,000
Common Stock	2,000,000	3,000,000
Surplus (none)		

**10-9.** Make the following computations from the data given below:

- (1) Shares of Preferred Stock Outstanding.
- (2) Shares of Common Stock Outstanding.
- (3) Number of Times Preferred Dividend Earned.
- (4) Earnings Available per Share of Common.
- (5) Rate of Earnings (on Beginning of Year Book Value) Available for Common.
- (6) Price-Earnings Ratio of Common.
- (7) Cash Yield on Preferred Market Price.

Data :

Common Stock Authorized (par \$20)	\$600,000
Common Stock Unissued	400,000
7% Preferred Stock Issued (par \$50) Cumulative, Nonparticipating, no Dividends in Arrears	500,000
7% Preferred Stock in Treasury	100,000
Earnings for the Year	91,000
Preferred Dividends for Current Year, Declared and Paid in Current Year	28,000
Common Dividends for Current Year, Declared and Paid in Current Year	30,000
Long-Term Debt Outstanding	None
Total Surplus at Beginning of Year	100,000
Current Market Quotation per Share, Preferred	70.00
Current Market Quotation per Share, Common	94.50

**10-10.** Using the data given below state, without showing computations, your answers to the following:

- (a) Preferred Stock Outstanding—Total Par Amount.
- (b) Preferred Stock Outstanding—Shares.
- (c) Common Stock Outstanding—Total Par Amount.
- (d) Common Stock Outstanding—Shares.
- (e) Earnings per Share of Preferred Stock.
- (f) Rate of Earnings (on Par) Available for Common.
- (g) Earnings Available per Share of Common.
- (h) Rate of Earnings (on Beginning of Year Book Value) Available for Common.
- (i) Rate of Earnings (on Market Price) Available for Common.
- (j) Price-Earnings Ratio of Common.
- (k) Cash Yield on Common Market Price
- (l) Number of Times Preferred Dividend Has Been Earned.
- (m) Cash Yield on Preferred Market Price.

Data:	Case (1)	Case (2)
6% Preferred Stock Authorized (Cumulative, Nonparticipating, no dividends in arrears, Par \$50) .....	\$200,000	\$300,000
6% Preferred Stock Unissued .....	100,000	100,000
Common Stock Issued (Par \$25) .....	130,000	120,000
Treasury Stock Common .....	42,000	52,000
Total Surplus at Beginning of Year .....	44,000	32,000
Earnings for the Year .....	50,000	80,000
Preferred Dividends for Current Year (declared and paid in the current year) .....	6,000	12,000
Common Dividends for Current Year (declared and paid in current year) .....	35,200	27,200
Long-Term Debt Outstanding .....	None	None
Current Market Price per Share Preferred .....	60	40
Current Market Price per Share Common .....	50	100

**10-11.** "Corporate financial statements will continue to defy analysis for some time. The old rules of thumb aren't much help these days."

"General Motors' pamphlet report gives some idea why this is. Alfred P. Sloan, Jr., goes into great detail in explaining unusual charges, deductions from postwar reserves, special amortization of war plant, tax recoveries, and nonrecurring profits for 1945.

The sum of this is to show the complexity of accounting in a period such as this, the pitfalls awaiting the tenderfoot who attempts to analyze income statements or balance-sheets."

From *Business Week*, April 6, 1946.

What is meant by:

- (a) "a period such as this"?
- (b) "special amortization of war plant"?

Give an example of:

- (c) "unusual charges."
- (d) "deductions from postwar reserves."
- (e) "tax recoveries."
- (f) "nonrecurring profits."

**10-12.** The following excerpt was taken from the letter of the President in the annual report of the Doehler-Jarvis Corporation:

**Taxes—1950** Taxes, including federal, state, and local, amounted to \$6,805,174, which is equal to \$6.19 per share. These compare with \$3,154,747 or \$2.95 per share in 1949. By far the largest portion is the federal taxes on income, which reflect the effect of the increase in normal and surtax rates, and the institution of excess profits taxes—both retroactive to July 1, 1950.

Taxes continue to take an increasing share of profits. It is anticipated that for the year 1951, federal taxes will be considerably higher, in relation to

income, since both the increased normal and surtax rate and the excess profits tax will be effective for the full year, and it is indicated that the rates will be further increased.

**Excess Profits Tax Exemption**—The exemption, computed under the "Average Earnings Basis" in the Excess Profits Tax Act of 1950, is estimated at:

For 1950—\$9.26 per share and, after the 42% normal and surtax provided in the Revenue Act of 1950—\$5.37 per share.

For 1951—\$9.71 per share and, after the 47% normal and surtax provided in the Excess Profits Tax Act of 1950—\$5.14 per share.

1. Why are taxes frequently emphasized in annual reports?
2. What is meant by the Excess Profits Tax Exemption?
3. Explain the significance to prospective investors of the excess profits tax exemption per share.
4. Do the changes in rates indicated in the excerpt illustrate the difficulties management encounters in planning for taxes?

## Chapter XI

**11-1.** The following statement of manufacturing costs was used to show an increase in unit costs of materials and labor for the last half year as compared to the first half year. In your opinion do the figures support the conclusion stated?

	<i>January 1 to July 31</i>		<i>July 1 to December 31</i>	
Raw Materials .....	\$280,000	51%	\$402,800	53%
Direct Labor .....	130,000	24%	205,200	27%
Overhead .....	140,000	25%	152,000	20%
Total .....	<u>\$550,000</u>	<u>100%</u>	<u>\$760,000</u>	<u>100%</u>

**11-2.** (a) State briefly what information you would expect to obtain from the following ratios, viz.:

- (1) Net Sales to Gross Fixed Assets.
- (2) Net Sales to Receivables.
- (3) Cost of Goods Sold to Inventories.
- (4) Net Worth to Total Assets.
- (5) Current Assets to Current Liabilities.
- (6) Cash to Current Liabilities.
- (7) Net Income to Net Worth.

(b) When does the information become really useful?

(A. I. A. Exam.)

**11-3.** State your reasoned objections to the form and the substance (a) of the various numbered parts of the following certificate and (b) of the certificate as a whole:

AUDITORS' CERTIFICATE.

(1) We have audited the books, accounts and records of Adam & Smith, Inc., as at December 31, 19— and (2) certify that, (3) subject to the realization of the accounts receivable and the inventories, (4) the attached balance sheet is a true and correct statement of the company's financial position for the year. (5) We further certify that the accompanying profit-and-loss account as at December 31, 19— is (6) true and correct according to the books.

JONES, BROWN & COMPANY

(A. I. A. Exam.)

**11-4.** Give reasons why you agree or disagree with the following:

I remember when my father was interested in banking. Accountants would bring to him audit reports consisting of thirty or more typewritten pages. He would look at the auditor and say: "Young man, this is all Greek to me. All I want is six figures: (1) gross sales, (2) net profits, (3) amount charged to depreciation, (4) amount owed, (5) cash inventory and property value, and (6) cash in the bank. Give me these for a few years back on one sheet of paper, and I will give you my answer in two minutes" I have often thought of my father's wisdom in this statement. I have seen the companies with which I am connected, and those for which our organization is doing work, actually waste hundreds of thousands of dollars on auditors' reports.

**11-5.** What unsatisfactory condition is satirized in the following doggerel quoted from the April, 1951, issue of *The Accounting Review*, and what corrective measures have been taken?

"THE ACCOUNTANT'S REPORT"

"We have audited the balance sheet and here is our report:

The cash is overstated, the cashier being short;

The customers' receivables are very much past due,

If there are any good ones they are very, very few;

The inventories are out of date and practically junk;

And the method of their pricing is very largely bunk;

According to our figures the enterprise is wrecked....

But subject to these comments, the balance sheet's correct."

**11-6.** Comment on the following audit certificate:

"This is to certify that... the books and accounts of... were examined up to close of business on... and were found to be correct in every respect with all funds properly accounted for to the best of my knowledge and belief."

**11-7.** "The company's books are examined each year by... certified public accountants. Their report... appears below... The Auditors' Report is an important document. It represents the opinion of independent experts, based on a careful examination of the financial statements to the extent they consider necessary, and the determination that generally accepted accounting principles have been used consistently."

—PFEIFFER BREWING COMPANY

What utility lies in statements by the management that call attention to the auditors' report?

**11-8.** The following information was taken from the annual report of Jewel Tea Co., Inc.:

The flow of funds into our business, including the loan proceeds, and the uses to which they were put during the year, are summarized in the following statement:

Cash and Securities at Beginning of the year	<u>\$ 9,376,066</u>
<b>Sources of Funds in 1951:</b>	
Net Earnings .....	3 584,299
Depreciation .....	1,908,935
Long-Term Loans .....	8,000,000
Sale of Common Stock to Employees .....	68,399
	<u>13,561,633</u>
Total Funds Available .....	<u>22,937,699</u>
<b>Uses of Funds in 1951:</b>	
Dividends .....	2,241,930
New Property, Plant and Equipment (Less Net Book Value of Sales and Retirements)	3,704,690
Preferred Stock Purchases for Sinking Fund .....	297,017
Increase in Inventories .....	243,970
Increase in Accounts Receivable .....	745,843
Reduction in Current Liabilities .....	1,256,407
All Others .....	1,355
Total Funds Used .....	<u>8,491,212</u>
Cash and Securities at End of the Year	<u>\$14,446,487</u>

When negotiating the aforementioned loans, your management carefully weighed the various repayment schedules available to us. The schedules as finally agreed upon provide the necessary flexibility and, along with our preferred stock sinking fund requirements, call for fixed annual capital repayments averaging \$550,000 during the next 20 years. Retained earnings during the past decade have averaged over \$1,000,000 per year.

### PREFERRED STOCK

Preferred stock is 3 $\frac{3}{4}$ % cumulative \$100 par value, and 75,000 shares have been authorized and issued.

The company must acquire on or before each June 30, commencing in 1950, at least 1,500 shares in connection with sinking fund requirements of the issue.

### LONG-TERM INDEBTEDNESS

During the year the company received \$5,000,000 from two life insurance companies in exchange for its 2.85% unsecured notes, payable in equal annual installments beginning February 1, with a final maturity on February 1,

The company has also received \$3,000,000 from a group of its principal banks, in exchange for its 2.25% unsecured 90-day notes. This loan is on a revolving credit basis until January 5, 1954, at which time the principal amount may be converted, in whole or in part, into a term loan at the company's option. Repayment terms call for 8% of the principal amount in each of the years 1955 through 1960 with a final payment of 52% in 1961.

1. What is the name which is generally applied to a statement of this kind and in what way does the above differ from the usual form?
2. Are we to assume that the company can increase its funds by merely recording depreciation on the books? Explain why this item is included as a source of funds.
3. State the advantages and disadvantages in furnishing stockholders with a statement of this kind.
4. Prepare a schedule of fixed capital repayments at par values for each year for the next 20 years and account for the average annual payment of \$550,000. Years having the same annual payments may be grouped together without a separate listing for each year.

**11-9.**

**CONSOLIDATED STATEMENT OF PENSION TRUST FUNDS**  
*established by*

**AMERICAN TELEPHONE AND TELEGRAPH COMPANY AND ITS PRINCIPAL TELEPHONE SUBSIDIARIES, WESTERN ELECTRIC COMPANY, INCORPORATED, AND ITS SUBSIDIARIES AND BELL TELEPHONE LABORATORIES, INCORPORATED**

Balance in Funds—December 31, 1949 . . . . . \$1,089,677,205

**ADDITIONS TO FUNDS DURING 1950:**

Payments into Funds by Companies	\$137,656,149
Interest Revenue, including gain or loss on investments disposed of	31,995,196
Other Additions	545,431
<b>TOTAL ADDITIONS</b>	<b>\$170,196,776</b>
<b>DISBURSEMENTS FOR PENSIONS DURING 1950</b>	<b>28,541,877</b>
<b>NET INCREASE IN FUNDS</b>	<b>141,654,899</b>

Balance in Funds—December 31, 1950 . . . . . \$1,231,332,104

**COMPRISED OF:**

Bonds of Bell Telephone Companies	.....	\$ 200,935,152
U. S. Government Obligations	.....	361,971,818
Public Utility, Railroad, and Industrial Bonds	.....	646,583,338
Other Investments	.....	10,097,556
Cash and Accrued Interest Not Due	.....	11,744,240
<b>TOTAL</b>		<b>\$1,231,332,104</b>

The foregoing statement was included in the annual report of the American Telephone and Telegraph Company. The following related excerpt was taken from the report of the Board of Directors:

***Employee Benefits and Pension Payments***

About \$199,000,000, equal to 9.9 per cent of the payroll, was expended for benefit and pension purposes in 1950 by the Bell System Companies, including Western Electric Company and Bell Telephone Laboratories. Payments to about 118,000 employees and their dependents, to Pension Trust Funds, and to the Federal government for social security old-age benefits, were as follows:

To Pension Trust Funds	\$137,656,000
Employer's Tax—Social Security Old-Age Benefits	23,747,000
Sickness Disability Benefits	28,641,000
Accident Disability Benefits	1,622,000
Death Benefits	4,906,000
Disability Pensions	2,474,000
<b>Total</b>	<b>\$199,136,000</b>

1. Are these trust funds a part of the balance sheets of the companies listed?
2. What relation do the trust funds have to the "income" statements of the companies?
3. Who is entitled to the interest and other income from the securities in the trust funds?
4. Is it logical to combine all employee benefit and pension payments as shown above?

**11-10.** The following explanation appeared in the annual report of a company:

"Working capital reflects the company's ability to pay liabilities that will become due within a year. A company may have total assets far in excess of its total liabilities, and yet if too high a proportion consists of land, plant and equipment, and other fixed items, there may be inadequate working capital. A shortage of working capital may seriously limit a company's operations and, in particular, may make it impossible for a business to take advantage of opportunities for sound growth."

—*The Journal of Accountancy*, January, 1949, p. 41

Is this a good example of what may well be included in annual reports?

## Chapter XII

**12-1.** There are some analysts who believe that the operating ratio has of itself little or no significance in the study of the earning power of railroads. Do the following figures support this view? Explain.

	<i>Railroad</i>			
	<i>R</i>		<i>S</i>	
(Assume same mileage owned and operated)				
Gross Operating Revenues	\$25,000,000	100%	\$25,000,000	100%
Maintenance of Way and Equipment	8,750,000	35%	5,000,000	20%
Transportation and Other Operating Expenses	8,750,000	35%	12,500,000	50%
Total Operating Expenses	17,500,000	70%	17,500,000	70%

## 12-2.

**MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE  
RAILROAD COMPANY**

**INCOME ACCOUNT**

	Year 1950	Year 1949	Increase or <i>Decrease</i>
<b>RAILWAY OPERATING REVENUES:</b>			
Freight Revenue	\$34,742,710	\$32,042,081	\$2,700,629
Passenger Revenue	1,063,331	1,351,907	288,576
All Other Revenue	2,563,937	2,036,980	526,957
Total Railway Operating Revenues	<u>38,369,978</u>	<u>35,430,968</u>	<u>2,939,010</u>

**RAILWAY OPERATING EXPENSES:**

Maintenance of Way and Structures	7,658,247	7,112,077	546,170
Maintenance of Equipment	6,255,620	6,072,726	182,894
Traffic	809,678	780,436	29,242
Transportation	15,240,028	14,455,315	784,713
Miscellaneous	209,214	220,888	-11,674
General	1,113,419	1,007,430	105,989
Total Railway Operating Expenses	<u>31,286,206</u>	<u>29,648,872</u>	<u>1,637,334</u>
Net Revenue from Railway Operations	7,083,772	5,782,096	1,301,676
Railway Tax Accruals	4,065,316	3,180,924	884,392
Railway Operating Income	3,018,456	2,601,172	417,284
Equipment Rents—Net Decrease	407,226	454,259	-47,033
Joint Facility Rents—Net Decrease	211,488	215,437	-3,949
Net Railway Operating Income	2,399,742	1,931,476	468,266
Other Income	194,360	220,920	-26,560
Total Income	2,594,102	2,152,396	441,706
Miscellaneous Deductions from Income	56,980	22,548	34,432
Income Available for Fixed and Contingent Charges	<u>2,537,122</u>	<u>2,129,848</u>	<u>407,274</u>

**FIXED CHARGES:**

Rent for Leased Road and Equipment	1,685	1,685	
Interest on Equipment Obligations	8,903		8,903
Interest on Unfunded Debt	9,447	1,678	7,769
Amortization of Discount on Funded Debt	2,876	1,925	951
Total Fixed Charges	<u>22,911</u>	<u>5,288</u>	<u>17,623</u>
Income after Fixed Charges	<u>2,514,211</u>	<u>2,124,560</u>	<u>389,651</u>

CONTINGENT CHARGES:	Year 1950	Year 1949	Increase or Decrease
Interest on First Mortgage Bonds ..	283,909	283,658	251
Interest on General Mortgage Bonds ..	584,688	591,776	7,088
Sinking Fund—General Mortgage ..	100,645	100,645	..
Total Contingent Charges .....	<u>969,242</u>	<u>976,079</u>	<u>6,837</u>
Net Income .....	<u>\$ 1,544,969</u>	<u>\$ 1,148,481</u>	<u>\$ 396,488</u>

1. Compute the percentage increase of total operating revenues and total operating expenses and state whether or not the trend revealed is favorable or unfavorable.
2. Compute the percentage increase in railway tax accruals and give your opinion as to which tax accounted for the greater part.
3. What taxes are likely included in Railway Tax Accruals?
4. Is there anything unusual about the terminology of Railway Tax Accruals and its location in the Income Account as compared to industrial corporation statements?
5. The following tabulation appeared in the report:

Times Earned:	1950
Interest on First Mortgage Bonds .....	8.9 •
Interest on General Mortgage Bonds .....	3.8
Sinking Fund-General Mortgage .....	16.4

Show how each of these results were computed. Is there any question about the method used?

6. Why is the interest on the mortgage bonds placed under the heading "Contingent Charges"?
7. Is the amount of \$100,645 set aside each year for the sinking fund a true expense?
8. Does the heading "Fixed Charges" as used in railroad reports have the same meaning as in manufacturing industries?
9. What is the major source of revenue to the company?
10. In what accounts would you expect to find the depreciation charges?

**12-3.** A certain railway company in its annual report summarized the income for the preceding calendar year as follows:

RESULTS FOR THE YEAR

1. Operating Revenues .....	\$28,478,081.95
(Increase \$3,880,892.07, or 15.78%)	
2. Operating Expenses .....	<u>21,137,287.29</u>
(Increase \$1,711,327.33, or 8.81%)	
Net Operating Revenue .....	<u>\$ 7,340,794.66</u>
(Increase \$2,169,564.74, or 41.95%)	

3. Taxes and Uncollectible Railway Revenues .....	<u>1,216,381.84</u>
(Increase \$37,884.89, or 3.21%)	
Railway Operating Income .....	\$ 6,124,412.82
(Increase \$2,131,679.85, or 53.39%)	
4. Net Equipment and Joint Facility Rents .....	<u>1,296,216.17</u>
(Increase \$78,148.54, or 5.69%)	
Net Railway Operating Income .....	\$ 4,828,196.6
(Increase \$2,209,828.39, or 84.4%)	
5. Miscellaneous Income .....	<u>366,719.11</u>
(Decrease \$53,770.77, or 12.79%)	
Total Gross Income .....	\$ 5,194,915.76
(Increase \$2,156,057.62, or 70.95%)	
6. Rentals and Other Payments .....	<u>172,394.83</u>
(Decrease \$17,031.00 or 8.99%)	
Income for Year Available for Interest .....	\$ 5,022,520.93
(Increase \$2,173,088.62 or 76.26%)*	
7. Increase (67.58% of amount available) .....	<u>3,394,272.33</u>
(Decrease \$70,785.13, or 2.04%)	
Net Income for Year Applicable to Dividends .....	\$ 1,628,248.60*
(Compared with a deficit of \$615,625.15 last year)	

(a) In a statement prepared in detail which of the items numbered above would likely be expanded and what would be the nature of the accounts added? Answer by number without repeating the titles given.

(b) Is this a comparative statement?  
 (c) Do you believe a condensed statement of this kind is of value to stockholders who are supplied with a detailed income account?  
 (d) Was there an increase or decrease in the operating ratio?

**12-4.** Define the following terms used in the analysis of railroad statements:

- (a) Ton-Miles.
- (b) Fixed Charges.
- (c) Railway Operating Revenues.
- (d) Maintenance.
- (e) Traffic Density.
- (f) Per-Cent Operating Revenue from Freight.
- (g) L. C. L.
- (h) Average Freight Haul.
- (i) I. C. C. Reports.
- (j) Rolling Stock.
- (k) Funded Debt per Mile.
- (l) Capitalization per Mile.

## Chapter XIII

**13-1.** The general form and content of the railway balance sheet is indicated below. Compare this statement with the industrial balance sheet, (1) by stating whether each item appearing under the group headings is ordinarily so classified in the industrial balance sheet, and (2) by discussing the general arrangement of the groups

<i>Assets</i>	<i>Liabilities</i>
<b>Investments</b>	Capital Stock
Investment in Road and Equipment	Common
Improvements on Leased Railway	Preferred
Property	
Miscellaneous Physical Property	Long-term Debt
Investments in Affiliated Companies	General Mortgage Equipment Trust Obligations
 <b>Current Assets</b>	 <b>Current Liabilities</b>
Cash	Audited Accounts and Wages Payable
Loans and Bills Receivable	Interest Matured Unpaid
Traffic & Car-Service Balances Receivable	Unmatured Interest Accrued
Material and Supplies	Tax Liability
 <b>Deferred Assets</b>	 <b>Deferred Liabilities</b>
Working Fund Advances	Employee's Pension Fund
Insurance and Other Funds	
 <b>Unadjusted Debits</b>	 <b>Unadjusted Credits</b>
Rents and Insurance Premiums Paid in Advance	Insurance & Casualty Reserves
Discount on Funded Debt	Accrued Depreciation—Leased Property
Discount on Stock	
	 <b>Surplus</b>
	Appropriated Surplus
	Unappropriated Surplus

**13-2.** Which of the two railroads whose condensed statements appear below is in the stronger financial position? Give reasons for your answer.

	Railroad (000 omitted)			
	<i>X</i>		<i>Y</i>	
Assets	Amount	Per Cent	Amount	Per Cent
Investment in Road & Equipment	\$710,482	92.1	\$321,540	70.7
Improvements on Leased Property	320	.0	31,700	7.0
Investments in Affiliated Co.	25,750	3.3	43,000	9.4
Other Investments	650	.1	38,516	8.5
Cash	7,850	1.0	6,704	1.5
Accounts Receivable	8,230	1.1	4,098	.9
Material and Supplies	12,418	1.6	7,553	1.6
Deferred Assets	2,605	.3	822	.2
Unadjusted Debits	3,719	.5	785	.2
Totals	<u>\$772,024</u>	100.0	<u>\$454,718</u>	100.0
<i>Liabilities</i>				
Preferred Stock	\$119,175	15.4	\$ 69,700	15.3
Common Stock	130,000	16.8	80,400	17.7
Funded Debt	465,870	60.4	131,654	28.9
Accounts Payable	13,730	1.8	6,297	1.4
Loans & Bills Payable	2,500	.3		
Other Current Liabilities	11,632	1.5	3,241	.7
Accrued Depreciation	5,583	.7	58,720	12.9
Other Unadjusted Credits	12,774	1.7	542	.1
Appropriated Surplus	2,310	.3	92,560	20.4
Profit and Loss	8,450	1.1	11,604	2.6
Totals	<u>\$772,024</u>	100.0	<u>\$454,718</u>	100.0

**13-3.** Class I railways had, on a certain date, outstanding securities in the hands of the public as follows:

Capital Stock	.....	\$ 7,001,705,892
Funded Debt	.....	11,340,591,537
Total	.....	<u>\$18,342,297,429</u>

(a) In your opinion did these figures reveal a satisfactory situation for the industry as a whole?

(b) The total property investment accounts of the roads at the time was reported at \$25,714,360,369. How do you account for the difference in the total figures, and does this difference suggest that the proportions of capital stock and funded debt may be an incomplete test to use in analysis work?

(c) Assuming the correctness of the figures above, would you say that the industry is heavily loaded with "watered stock"?

## Chapter XIV

**14-1.** The following is part of the information which is supplied by an investment service company to its subscribers in its analysis of public utilities. State briefly the meaning of the ratios and terms used.

- (a) Current Assets ÷ Current Liabilities.
- (b) Gross Revenue ÷ Net Worth.
- (c) Gross Revenue ÷ Fixed Assets.
- (d) Net for Common.
- (e) Net Profit ÷ Gross Revenue.
- (f) Net Profit ÷ Net Worth.
- (g) Depreciation ÷ Fixed Assets.
- (h) Depreciation ÷ Gross Operating Revenue.
- (i) Times Bond Interest Earned.
- (j) Times Preferred Dividends Earned.

**14-2.** The following items appeared as deferred charges in the balance sheets of various public utilities. Do you consider them to be proper deferred charges from the standpoint of conventional accounting, disregarding the fact that the treatment shown may be permitted by the regulatory body having jurisdiction? Give reasons.

1. Abandoned Street Railway Properties . . . . .	\$1,432,978
(\$747,824 being amortized)	
2. Sundry Work in Progress . . . . .	37,455
3. Miscellaneous Items in Suspense . . . . .	
Items being written off over a period of years and charges pending disposition.	647,804
4. Undistributed Clearing Accounts . . . . .	185,671
5. Unadjusted Insurance Claims . . . . .	\$68,000
Less: Reserve . . . . .	24,000
	44,000
6. Unexpired Taxes . . . . .	557,332
7. Renovation Expenses (being amortized) . . . . .	283,417
8. Organization Expense . . . . .	845,650
9. Public Service Commission Audit and Appraisal Expense—Unamortized . . . . .	417,919
10. Commission and Selling Expense on Preferred Stock . . . . .	356,413
11. Transmission Pipe Line Expenditures Being Amortized over Life of Gas Contracts . . . . .	814,160
12. Unamortized Discount on Funded Debt . . . . .	167,370

**14-3.** A. The accountants' certificate that accompanied the published statements of a public utility company contained the following paragraph:

The investments in subsidiaries are carried at company's valuations which do not purport to represent realizable values at December 31, 19—, as to which we express no opinion. The corporate deficit as of December 31, 19—, was charged to capital surplus at the end of that year in accordance with approval by stockholders. Interest paid on convertible obligations in 19— in the form of Scrip Certificates, aggregating approximately \$10,711,000 (of which approximately \$2,745,000 was applicable to 19—) was charged to capital surplus. Debt discount and expense on bonds still outstanding was charged to capital surplus in prior periods.

1. These comments were made by the accounting firm for what purpose?

2. Do you have any criticism of the company's method of handling the items mentioned? Explain.

B. The same as A above except that the following is substituted for the quoted paragraph:

The company under the retirement method has provided for retirement losses currently realized and in addition has provided a reserve for future retirements. This method does not contemplate a full provision for accrued depreciation as determined by the age and estimated service life of the properties.

C. Does the following appear to be a sound rule?

The remaining unamortized expense of issue of the original bonds and the expense of the exchange are both expenses attributable to the issuance of the new bonds and should be treated as a part of the cost of obtaining the loan. They should accordingly be amortized annually throughout the term of the bonds delivered in exchange for those retired.

(*Great Western Power Co. of Calif. vs. Commissioners*, 56 S. Ct. 576)

**14-4.** The asset side of the balance sheets and the statements of income presented below have been taken from the annual report of the Laclede Gas Company:

	BALANCE SHEETS		At September 30,	
	Assets		1951	1950
Property and Plant:				
Gas Plant .....		\$67,769,857	\$59,232,648	
Less: Reserve for Retirements .....		7,316,322	6,368,258	
		<hr/>	<hr/>	
		\$60,453,535	\$52,864,390	

*At September 30,  
1951                    1950*

Gas Plant Acquisition Adjustment (cost in excess of original cost) Less Amortization . . . . .	\$ 3,260,412	\$ 3,587,772
Other Property—Land, at Original Cost . . . . .	33,948	33,948
Total Property and Plant . . . . .	<u>\$63,747,895</u>	<u>\$56,486,110</u>
Investments, at Cost or Less . . . . .	<u>\$ 4,401</u>	<u>\$ —</u>

Current Assets:

Cash . . . . . \$ 1,354,282 \$ 1,107,069

Special Deposits:

For Refunds to Consumers (subject to expenses)—contra.	2,529,760	2,627,916
For Payment of Dividends, etc. . . . .	87,709	445,687

Accounts Receivable—Trade:

Gas—Consumers Accounts . . . . .	1,316,159	1,153,485
Merchandise (including Installments Due after One Year)	415,980	513,304
Miscellaneous	55,174	91,838
Less: Reserves for Uncollectible Accounts—credit.	177,584	151,141

Inventories at Average Cost:

Materials and Supplies for Construction and Operation . . . . .	3,006,382	• 1,723,733
Merchandise for Resale . . . . .	726,386	429,633
Prepayments . . . . .	82,830	68,587
Total Current Assets . . . . .	<u>\$ 9,397,078</u>	<u>\$ 8,010,111</u>

Deferred Debits:

Costs Incident to Change-Over to Natural Gas:		
Conversion of Consumers' Appliances . . . . .	\$ 1,092,555	\$ 1,792,624
Loss on Sale of Gas Plant . . . . .	2,044,729	2,044,729
Unamortized Expense on Long-Term Debt . . . . .	130,423	85,315
Miscellaneous . . . . .	105,213	61,137
Total Deferred Debits . . . . .	<u>\$ 3,372,920</u>	<u>\$ 3,983,805</u>
	<u>\$76,522,294</u>	<u>\$68,480,026</u>

STATEMENTS OF INCOME

*Twelve Months Ended  
September 30,  
1951                    1950*

Operating Revenues . . . . .	\$28,321,234	\$20,698,820
Operating Revenue Deductions:		
Operating Expenses:		
Gas Purchases . . . . .	\$ 8,375,366	\$ 5,310,390
Amortization of Conversion Expense . . . . .	700,000	500,000
Other . . . . .	6,850,087	5,220,782
Maintenance . . . . .	1,162,791	794,397

Notes have been omitted

	<i>Twelve Months Ended September 30, 1951            1950</i>	
Provision for Retirements . . . . .	\$ 1,156,274	\$ 1,017,293
Portion of Loss on Sale of Gas Plant Equivalent to Reduction in Income Taxes Attributable Thereto	—	314,000
Taxes, Other than Income Taxes . . . . .	2,404,599	1,972,200
Federal, State, and Local Income Taxes . . . . .	3,120,000	1,629,000
Federal Excess Profits Tax . . . . .	130,000	—
Total Operating Revenue Deductions . . . . .	<u>\$23,899,117</u>	<u>\$16,758,062</u>
Operating Income . . . . .	<u>\$ 4,422,117</u>	<u>\$ 3,940,758</u>
Other Income or Loss . . . . .	76,869	33,763
Gross Income . . . . .	<u><u>\$ 4,345,248</u></u>	<u><u>\$ 3,974,521</u></u>
 Deductions from Gross Income:		
Interest on Long-Term Debt . . . . .	\$ 936,667	\$ 1,191,063
Amortization of Expense on Long-term Debt . . . . .	• 6,003	39,986
Other Interest Charges . . . . .	144,009	18,423
Portion of Cost of Redemption of Debentures and Notes (including unamortized issue expenses) . . . . .	•	•
Equivalent to Reduction in Income Taxes Attributable Thereto	—	71,000
Interest Charged to Construction—credit . . . . .	39,125	41,091
Amortization of Gas Plant Acquisition Adjustment . . . . .	314,400	168,000
Miscellaneous . . . . .	50,487	48,662
Total Deductions from Gross Income . . . . .	<u>\$ 1,412,451</u>	<u>\$ 1,496,043</u>
Net Income . . . . .	<u><u>\$ 2,932,797</u></u>	<u><u>\$ 2,478,478</u></u>

Notes have been omitted.

1. How do you account for the fact that the gas plant assets are being carried in two accounts?
2. Explain the purpose and significance of the Reserve for Retirements.
3. Compute the per cent of the provision for retirements for the last year to the plant assets as of the beginning of the year. What is the purpose of such a computation?
4. What was the net increase in new plant facilities during the last year? Were any interest charges included?
5. Explain the meaning of the word "contra" in connection with the special deposits.
6. Is there a reason for calling attention to the fact that merchandise accounts receivable include installments due after one year?
7. Is the Deferred Debit—Conversion of Consumers Appliances —being written off by the company?
8. Is the loss on sale of gas plant amounting to \$2,044,729 an asset? Explain.

9. The auditors' opinion accompanying the statements included an exception because of the loss on sale of gas plant and the use of the retirement reserve method. Why is this appropriate?

10. Why was the "portion of loss on sale of gas plant equivalent to reduction in income taxes attributable thereto" charged to expense?

11. Point out differences between the statements shown and those of mercantile and manufacturing companies.

**14-5.** Examine the statement below and answer the questions which follow. Each question is preceded by a letter which also designates the item in the statement to which the question refers.

BLANK ELECTRIC CORPORATION  
AND WHOLLY OWNED SUBSIDIARIES  
CONSOLIDATED SURPLUS ACCOUNT (g)

Year 19—

Balance, January 1, 19—	\$13,497,610.43
Deduct, Deficiency of Cash Income for the Year, per Income Account .....	2,312,257.68 (a)
	<u>\$11,185,361.75</u>
Deduct Losses Realized on Sale of Securities (net), etc.	2,913,228.18 (b)
	<u>\$ 8,272,073.57</u>

Add:

Profit Arising from Purchase of Debentures During Year	\$800,544.01 (c)
Credit Arising Through Issuance of Common Stock in Payment of Interest on Optional 5½% Debentures	950.85 (d)
	<u>801,494.86</u>
Transferred to "Reserve for Contingencies" .....	<u>\$ 9,073,568.43</u>
Balance, December 31, 19— (consisting of balance of credits accumulated from valuation of stock dividends received), carried to Balance Sheet	210,000.00 (e) 8,863,568.43 (f)

(a) It might be inferred from the words "Cash Income" that the income account was prepared on the cash basis rather than the accrual basis. Assuming that you had the Company's Balance Sheet and Income Account before you, explain how you would determine which basis was used.

(b) Would you say that this item represents securities issued by the Blank Electric Corporation?

(c) Same as (b) above.

- (d) Has this item any special significance?
- (e) What is probably the purpose of this Reserve?
- (f) In your opinion does this balance represent true surplus? Explain fully.
- (g) State briefly the purpose of this kind of statement.

## Chapter XV

**15-1.** The following condensed statement was prepared by the bookkeeper of the Duwell Manufacturing Company.

ANNUAL STATEMENT			
<i>Assets</i>		<i>Liabilities</i>	
Real Estate . . . . .	\$ 70,000	Capital Stock . . . . .	\$100,000
Cash . . . . .	16,000	Mortgage Bonds . . . . .	100,000
Good Will . . . . .	50,000	Reserves . . . . .	23,000
Equipment . . . . .	85,000	Due Banks . . . . .	25,000
Inventories . . . . .	65,000	Trade Creditors . . . . .	52,000
Receivables . . . . .	48,000	Surplus . . . . .	34,000
	<hr/> <b>\$334,000</b>		<hr/> <b>\$334,000</b>

- (a) How do you account for the fact that the Cash is less than the Surplus?
- (b) What improvements in the form of the statement could you suggest to the bookkeeper?
- (c) The directors wish to declare a 10% dividend. Would you recommend that it be paid in cash or stock?
- (d) Would you say that the company was over- or undercapitalized?
- (e) Would you consider the bonds a good investment?
- (f) How would you calculate the book value of each share of stock?
- (g) Would you rather buy a share of stock than one of the bonds? What additional information would you ask for before making a final decision?
- (h) What significant ratios can be calculated from the data supplied?
- (i) Indicate which items would be increased or decreased by the following transactions:
  - (1) Distribution of a 10% stock dividend.
  - (2) Payment of 5% interest on bonds.
  - (3) Creation of a \$4,000 reserve for bad debts.

**15-2.** Analyze the following balance sheet fully and show your familiarity with the application of principles by explaining completely the significance of the various ratios obtained. A definite decision should be made as to the general credit standing of the corporation.

### THE RADICAL CORPORATION

#### BALANCE SHEET, JANUARY 1, 19—

Assets		Liabilities & Capital	
Cash . . . . .	\$ 85,000	Notes Payable . . . . .	\$ 100,000
Accounts Receivable . . . . .	225,000	Accounts Payable . . . . .	200,000
Inventory . . . . .	400,000	Other Current Liabilities . . . . .	10,000
Plant & Equipment . . . . .	750,000	Bonds Payable . . . . .	500,000
Good Will . . . . .	600,000	Capital Stock . . . . .	1,000,000
Miscellaneous Assets . . . . .	40,000	Surplus . . . . .	290,000
	<u>\$2,100,000</u>		<u>\$2,100,000</u>

Sales for Year . . . . .	\$2,000,000
Cost of Sales . . . . .	1,200,000
Net Profit . . . . .	300,000
Dividends Paid . . . . .	70,000
Terms of Sale . . . . .	"net 30 days"

(Wisconsin C. P. A. Exam.)

**15-3.** Answer the following questions concerning the *N. L. S. S.* Corporation, whose Income Statements and Balance Sheets are shown below in condensed form. (Make all calculations to one decimal place, i.e., to the nearest correct figure for the first decimal place, but you need not show your calculations.):

	First Year	Second Year
Net Sales (all on account) . . . . .	\$750,000	\$920,000
Less Cost of Goods Sold . . . . .	500,000	690,000
Gross Profit . . . . .	\$250,000	\$230,000
Less Expenses* . . . . .	220,000	210,000
Net Profit . . . . .	<u>\$ 30,000</u>	<u>\$ 20,000</u>

	End First Year	End Second Year
Cash . . . . .	\$ 60,000	\$ 70,000
Receivables . . . . .	300,000	180,000
Merchandise Inventory (Cost) . . . . .	120,000	90,000
Fixed Assets (Net) . . . . .	510,000	530,000
Total Assets . . . . .	<u>\$990,000</u>	<u>\$870,000</u>

\* Including \$80,000 depreciation for each year.

	<i>End First Year</i>	<i>End Second Year</i>
Accounts and Notes Payable (Current) .....	\$190,000	\$100,000
Bonds Payable (Fixed) .....	200,000	150,000
Capital Stock (Par) .....	500,000	580,000
Surplus (Earned) .....	100,000	40,000
Total Equities .....	<b>\$390,000</b>	<b>\$870,000</b>

There was a 10% stock dividend declared and distributed during second year. Other changes in Surplus during the second year were caused by profits and cash dividends.

1. What was the amount of funds provided during second year:  
 By profits (after adding back nonfund charges)?  
 By decrease in working capital?  
 By sale of capital stock?
2. How much funds were applied during the second year:  
 To purchase of fixed assets?  
 To payment of cash dividends?  
 To reduction of fixed liabilities?
3. What is the receivables turnover for the second year?
4. What is the current ratio at the end of the first year?
5. What is the average age (in months) of the receivables at the end of the second year?
6. What was the amount of cash received from customers during the second year?
7. What was the cost of merchandise purchased during the second year?
8. What is the receivables turnover for the first year?
9. What is the current ratio at the end of the second year?
10. What is the average age (in months) of the receivables at the end of the first year?
11. What is the rate of gross profit for the first year?
12. What is the acid test ratio at the end of the second year?
13. What is the acid test ratio at the end of the first year?
14. What is the rate of gross profit for the second year?
15. If the minimum current ratio permitted is 3 to 1, what is the "maximum line of credit" at the end of the second year?

**15-4.** Data from the annual report of Daystrom, Incorporated are summarized below:

		CONSOLIDATED BALANCE SHEET	
	Assets	March 31,	
		1951	1950
<b>CURRENT ASSETS:</b>			
Cash		\$ 1,936,613	\$ 2,810,054
U. S. Treasury Savings Notes, Series "D"—at Cost		\$ 594,657	\$ 478,775
Accounts and Notes Receivable:			
Customers		\$ 6,787,021	\$ 4,690,810
Others		237,689	171,717
		<u>\$ 7,024,710</u>	<u>\$ 4,862,527</u>
Less—Allowance for Doubtful Accounts		232,833	244,125
		<u>\$ 6,791,877</u>	<u>\$ 4,618,402</u>
Inventories:			
Raw Materials		\$ 1,422,483	\$ 1,237,157
Work in Process		6,186,430	4,401,121
Finished Goods		2,221,659	2,210,420
		<u>\$ 9,830,572</u>	<u>\$ 7,848,698</u>
Deposits with Insurance Companies, Prepaid Insurance, Taxes, Supplies, and Other Expenses		\$ 605,046	\$ 630,385
Total Current Assets		<u>\$19,758,765</u>	<u>\$16,386,314</u>
<b>FIXED ASSETS:</b>			
Buildings, Machinery, and Equipment		\$10,399,340	\$ 9,961,588
Timberland		518,845	328,442
		<u>\$10,918,185</u>	<u>\$10,290,030</u>
Less—Accumulated Depreciation and Depletion		5,915,905	5,430,458
		<u>\$ 5,002,280</u>	<u>\$ 4,859,572</u>
Land		245,292	201,305
		<u>\$ 5,247,572</u>	<u>\$ 5,060,877</u>
<b>OTHER ASSETS AND DEFERRED CHARGES:</b>			
Cash Surrender Value of Life Insurance Policies		\$ 189,652	\$ 172,292
Sundry Investments, etc.—at Cost or Less		27,393	60,568
Other		264,260	120,109
		<u>\$ 481,305</u>	<u>\$ 352,969</u>
		<u>\$25,487,642</u>	<u>\$21,800,160</u>
		March 31,	
		1951	1950
<b>CURRENT LIABILITIES:</b>			
Notes Payable to Bank—Due within One Year		\$ 1,300,000	\$ —
Accounts Payable—Trade, Customers' Advance Payments, Other Accounts Payable, and Accrued Expenses		3,712,667	2,704,406

## PROBLEMS

651

	<i>March 31,</i>	
	1951	1950
<b>Federal Taxes on Income, Estimated</b>	<b>\$ 2,928,543</b>	<b>\$ 911,225</b>
<i>Less—U. S. Treasury Savings Notes, Series "D"</i>		
— <i>at Cost</i>	<i>(2,928,543)</i>	<i>(911,225)</i>
<b>Dividend Payable May 15, 1951 and May 15, 1950</b>	<b>468,683</b>	<b>156,022</b>
<b>Total Current Liabilities</b>	<b><u>\$ 5,481,350</u></b>	<b><u>\$ 2,860,428</u></b>
<b>LONG-TERM LIABILITIES:</b>		
Notes Payable to Bank	\$ 835,000	\$ 1,390,000
Estimated Federal Income and State Taxes Which May Be Payable when Installment Profits Are Realized	784,000	520,000
	<u><u>\$ 1,619,000</u></u>	<u><u>\$ 1,910,000</u></u>
	<i>Capital</i>	
<b>CAPITAL STOCK:</b>		
Authorized—750,000 Share, Par Value \$10 per Share		
Issued and Outstanding	\$ 6,249,110	\$ 6,249,110
<b>CAPITAL SURPLUS</b>	<u>2,010,327</u>	<u>2,010,327</u>
<b>UNDISTRIBUTED ACCUMULATED EARNINGS, SINCE MARCH 31, 1936:</b>		
Appropriated as Reserve for Replacement of Plant	—	300,000
Unappropriated	10,127,855	8,484,294
	<u><u>\$18,387,292</u></u>	<u><u>\$17,043,731</u></u>
<i>Deduct—Capital Stock in Treasury—at Cost (none in 1951; 824 shares in 1950)</i>	<i>—</i>	<i>13,999</i>
	<u><u>\$18,387,292</u></u>	<u><u>\$17,029,752</u></u>
	<u><u>\$25,487,642</u></u>	<u><u>\$21,800,160</u></u>

### STATEMENT OF CONSOLIDATED EARNINGS

	<i>Fiscal Year Ended March 31,</i>	
	1951	1950
<b>NET SALES</b>	<b>\$42,397,508</b>	<b>\$32,763,201</b>
<b>OTHER INCOME:</b>		
Interest Earned	323,331	316,882
Discounts, Royalties, Commissions, and Other Income	635,465	487,680
	<u><u>\$43,356,304</u></u>	<u><u>\$33,567,763</u></u>
<b>DEDUCT:</b>		
Cost of Goods Sold	28,940,933	23,988,079
Selling, General, and Administrative Expenses	8,585,943	7,264,109
Interest Expense	174,193	168,105
Discounts Allowed	150,298	127,366
Other Expenses and Losses	72,606	190,968
	<u><u>\$37,923,973</u></u>	<u><u>\$31,738,627</u></u>
<b>Earnings Before Federal Taxes on Income</b>	<b>\$ 5,432,331</b>	<b>\$ 1,829,136</b>

	<i>Fiscal Year Ended March 31,</i>	
	1951	1950
<b>FEDERAL TAXES ON INCOME—Estimated:</b>		
Normal Income and Surtax .....	\$ 2,604,000	\$ 655,000
Excess Profits Tax .....	392,000	—
	<u>\$ 2,996,000</u>	<u>\$ 655,000</u>
Net Earnings .....	<u><u>\$ 2,436,331</u></u>	<u><u>\$ 1,174,136</u></u>

**NOTE:** Depreciation and depletion included above in the determination of net earnings aggregated \$730,558 for the 1951 fiscal year and \$708,565 for the 1950 fiscal year.

1. Complete the following "highlights":

	<i>Year Ended March 31</i>	
	1951	1950
Dividends Declared .....	\$1,092,770	\$624,087
Dividends Declared per Share .....	1.75	1.00
Net Earnings per Share .....	—	—
Number of Shares Outstanding .....	—	—
Book Value per Share .....	—	—
Net Working Capital .....	—	—
Current Ratio .....	—	—
Per Cent of Gross Profit .....	—	—

2. Does it appear that the shares outstanding March 31, 1951, were outstanding for the entire year ended on that date?
3. Compute for both years the days' sales outstanding, and the per cent of discounts allowed to net sales.
4. What working capital items increased and do the increases appear normal?
5. Why is it that cash decreased over \$800,000 although the earnings for the same period were more than \$2,400,000?
6. An accompanying note states that accounts and notes receivable include contracts maturing monthly within one to three years. The estimated income taxes that may be payable when installment profits are realized is not classified as a current liability. Comment.
7. How many Treasury Savings notes did the company own on March 31, 1951, and are they properly exhibited in the statement?
8. What is the significance of the undistributed accumulated earnings being dated?
9. The cost of treasury stock is deducted from the total of capital and surplus. In what other way is it commonly shown?
10. Prepare a statement of unappropriated undistributed accumulated earnings for the year ended March 31, 1951.
11. Of what value to the analyst is the information about depre-

ciation and depletion contained in the note to the earnings statement? The depletion is applicable to what asset?

12. Are the forms of the statements similar to those commonly used in annual reports of corporations? Comment.

## Chapter XVI

### 16-1.

#### BLANK MINING COMPANY

#### PROFIT AND LOSS STATEMENT

December 31, 19—

Gross Returns from Ores Shipped to Smelter .....	\$418,731.72
Deduct—Metals in Process (estimated) .....	75,203.42
Gross Smelter Returns Accounted for .....	\$343,528.30
 Deduct—Mining Costs and Expenses:	
Labor and Materials, Mining .....	\$171,937.16
Labor and Materials, Repair, Betterments .....	189,053.23
Insurance—Fire Liability .....	22,209.62
Taxes—State, City, County .....	2,971.41
Dismantling and Moving Unused Property .....	6,451.35
Balance .....	<u>392,622.77</u>
	\$ 49,094.47
 Add—Miscellaneous Items:	
Receivership Costs and Expenses .....	\$ 67,667.45
Legal, Traveling, Auditing .....	11,790.97
Transfer Agents and Reg. fees .....	3,806.74
Depreciation .....	30,388.03
Total .....	<u>113,653.19</u>
	<u>\$162,747.66</u>
 Deduct:	
Miscellaneous Income .....	\$ 5,363.52
Interest .....	<u>23,073.16</u>
Balance .....	<u>\$134,310.98</u>
Deduct—Metals in Process (above) .....	<u>75,203.42</u>
	<u>\$ 59,107.56</u>

The above statement, accompanied by an accountant's certificate, was published in the annual report of a certain mining company. Shortly thereafter a large city newspaper ran an article in the financial section stating that the company "shows a balance after deduction of all charges, of \$59,107 for the year."

- (a) What criticism or other comments have you to offer?
- (b) Recast the statement in more intelligible form. Segregate non-operating items and show after computing ordinary gain or loss.

Assume that the following amounts are nonoperating: \$6,451.35  
 \$67,667.45 \$3,806.74 \$5,363.52 \$23,073.16. Also assume that the initial inventory and the final inventory were equal (\$75,203.42).

**16-2.** The Deep Well Oil Company published the following as a balance sheet:

1. Capital Stock Authorized	.....	.....	\$110,000.00
2. Capital Stock Unissued	.....	\$ 99,399.70	
3. Preferred Stock Subscribed	.....		100.00
4. Subscriptions Receivable	.....	75,000	
10. Oil Leases	.....	9,999.97	
12. Preorganization Expense	.....	470.00	
13. Incorporation Expense	.....	55.70	
14. General Expense	.....	75.33	
15. Office Expense	.....	87.65	
16. Field Expense	.....	75.00	
30. W. B. Ladd	.....		171.22
31. C. B. Garnett	.....		75.00
32. H. C. Beeler	.....		75.00
Cash	.....	182.87	
		<u>\$110,421.22</u>	<u>\$110,421.22</u>

Criticize the statement.

**16-3.** A mining company shows the following balances:

Unappropriated Surplus	\$125,000.00
Sinking Fund Reserve	50,000.00
Reserve for Depletion	80,000.00
Reserve for Possible Underdepletion	25,000.00

The Sinking Fund Reserve has been created in accordance with the agreement with the bondholders of the company. There is only one class of stock outstanding. Assuming that there are no net worth accounts, other than those listed above, state what amount is legally available for dividends.

**16-4.** The directors of the D Mining Company plan to issue bonds of the company in order to raise needed funds. They wish to state in a circular advertising the bonds the amount of "net profits available for interest charges." They want to know if depletion must be deducted before such a statement can be properly made.

Write a letter to the directors advising them what the proper treatment would be, giving reasons for your opinion.

**16-5.** There is considerable variety in the accounting for depletion in nonferrous mines. In one case the following note to the financial statements explained the company's depletion policy:

"Depletion of metal mines charged to surplus is on the basis of units sold. The unit rates used are based on the mine values shown in the consolidated balance sheet and estimated ore reserves applicable thereto. Depletion used in estimating Federal taxes on income has been computed on a statutory basis and differs from the amount shown in these accounts."

1. Suggest other methods of accounting for depletion.
2. Explain briefly the computation of depletion on the statutory basis for Federal income tax purposes.

**16-6.** The Dark Coal Corporation has the following balance sheet immediately after organization:

Assets	Case (1)	Case (2)	Net Worth	Case (1)	Case (2)
Coal Lands	500,000	600,000	Capital Stock	550,000	800,000
Other Assets	100,000	300,000	Surplus	50,000	100,000
Total	600,000	900,000	Total	600,000	900,000

It was estimated that there were 2,000,000 tons of coal in the lands. During the first year of operations, 400,000 tons were mined at a total mining cost (excluding depletion) of \$1,800,000. Selling and Administrative expenses totaled \$300,000 for 300,000 tons sold at a price of \$8.00 per ton. Prepare a condensed balance sheet of the company at the end of the year (assuming no liabilities).

**16-7.** Early income tax laws and Supreme Court decisions did not allow companies to deduct depletion in computing taxable net income. That depletion has attained recognition is evidenced by the following statement made in 1927 by the Supreme Court in U. S. v. Ludey, 274 U. S. 295, page 302:

The depletion charge permitted as a deduction from the gross income in determining the taxable income of mines for any year represents the reduction in the mineral contents of the reserves from which the product is taken. The reserves are recognized as wasting assets. The depletion effected by operation is likened to the using up of raw material in making the product of a manufacturing establishment. As the cost of the raw material must be deducted from the gross income before the net income can be determined, so the estimated cost of the part of the reserve used up is allowed. The fact that the reserve is hidden from sight presents difficulties in making an estimate of the amount of the deposits. The actual quantity can rarely be

measured. It must be approximated. And because the quantity originally in the reserve is not actually known, the percentage of the whole withdrawn in any year, and hence the appropriate depletion charge, is necessarily a rough estimate. But Congress concluded, in the light of experience, that it was better to act upon a rough estimate than to ignore the fact of depletion.

- (a) Do you believe that the above is a good statement of the nature of depletion?
- (b) Some have said that depletion is similar to depreciation, while others have said that it is more like a gradual sale of an interest in property. Which one of these theories is supported by the decision quoted?
- (c) The term "reserve" is used in many different ways in accounting. What is the meaning of "reserves" as used above?
- (d) Because, as stated, the depletion charge is necessarily a rough estimate, there are some who maintain that the annual provision for depletion should be in excess of that which would be obtained by using estimated quantities. Do you agree with this position?

## Chapter XVII

**17-1.** A certain writer accounts for the main items in a bank's statement in the following manner. Study carefully the various steps and assumptions made and explain why you agree or disagree.

Many people think that a bank is simply an institution with some capital subscribed by stockholders, which invites the people of the community to deposit with it their surplus cash; that this cash constitutes the total deposits of the bank, and that it is lent to other people in the community who can use it to advantage when otherwise it would lie idle. The picture is not quite so simple. On the other hand, it is by no means as mysterious as some suppose.

Imagine a new farming community in a cattle range section of the United States, which has no bank and decides to establish one. Leading representatives of the community, which we shall call Rangerville, get together and contribute \$100,000 as capital for such an institution, putting up cash. The citizens of the community give the bank a send-off by depositing \$400,000, their entire savings, also in cash. The balance sheet of the new bank at this stage would stand as follows:

<i>Assets</i>		<i>Liabilities</i>
Cash .....	\$500,000	Capital .....
		Deposits .....
Total .....	<u>\$500,000</u>	Total .....
		<u>\$500,000</u>

... But the bank knows—as the goldsmiths discovered hundreds of years before—that it does not have to keep all the money deposited with it, for all depositors do not call for their money at one time. Moreover, if one depositor makes payment to another bank by check, the person receiving the check usually is satisfied to redeposit it in the bank. Actual withdrawals of cash and deposits of cash likewise tend to equalize one another.

The bank, therefore, decides to lend half the cash deposited with it to members of the community with good security to offer.

... Now assume that the borrowers take the cash from the bank, spending it in the community in wages, in buying cattle, or numerous other ways. Then assume that those with whom they spend it, finding themselves with more cash than they had before, decide that they, too, will become bank depositors, and promptly bring back the \$250,000 to the bank. The balance sheet now assumes the following form:

Assets		Liabilities	
Cash . . .	\$500,000	Capital . . . . .	\$100,000
Loans	250,000	Deposits . . . . .	650,000
Total	<u>\$750,000</u>	Total . . . . .	<u>\$750,000</u>

Here is something new in the situation. There is an expansion of the bank figures on both sides of the balance sheet. The community is now using \$750,000, whereas there was only \$500,000 altogether in the town when the bank opened. Through its ability to create credit the bank has made it possible for money to increase its usefulness by fifty per cent.

As a matter of fact, it seldom happens that the borrower withdraws his loan in cash. What usually happens is that he simply receives a deposit credit for the amount borrowed against which credit he can draw checks at his convenience. The effect on the balance sheet is the same in either case.

### 17-2. Prepare a statement of condition of the Farmers' Bank from the following figures (Surplus must be supplied):

Capital Stock	.....	\$ 500,600
Undivided Profits	.....	111,278
Collateral Loans	.....	4,335,442
Cashiers Checks	.....	100,589
U. S. Government Securities	.....	149,530
Dividends Unpaid	.....	120
Savings Deposits	.....	3,569,219
Savings Cash	.....	189,663
Savings Securities	.....	1,111,605
Savings Loans—Real Estate	.....	1,914,050
Savings Loans—Collateral	.....	353,901
Bills Discounted	.....	7,297,970
Demand Loans	.....	484,725
Overdrafts	.....	2,793
Other Securities	.....	1,249,835

## PROBLEMS

Banking House	\$ 500,000
Certified Checks	217,546
Trust Deposits	214,721
Reserved for Interest, Taxes, etc.	97,458
Due to Banks and Bankers	277,315
Cash on Hand	387,213
General Deposits	9,476,593
Certificates of Deposit	4,421,543
Due from Reserve Agents	1,429,640
Due from Banks and Bankers	73,820
Checks and Exchanges	252,234

(Adapted from Conn. C. P. A. Exam.)

**17-3.** The following information is obtained from the books of a bank:

	<i>January 1</i>	<i>December 31</i>
Total Resources	\$825,000	\$983,000
Total Deposits and All Other Liabilities	765,000	913,200
Outstanding Shares of Stock	400	410
The stock issued during the period was sold at par (\$100)		
Dividends amounting to \$6,000 were paid in September.		

Prepare a statement showing the profit or loss for the year.

**17-4.** From the following condensed statements of condition determine which bank is in the stronger financial position and explain why?

<i>Assets</i>	<i>First National</i>	<i>Second National</i>
Cash and Due from Banks	\$ 393,266	\$ 231,742
U. S. Government Securities	328,382	216,200
Other Securities	40,108	50,640
Stock in Federal Reserve Bank	3,150	3,000
Loans and Discounts	589,782	749,635
Banking House	15,213	120,320
Customers' Liability on Acceptances	16,111	15,976
Other Assets	3,938	32,321
<b>Total</b>	<b>\$1,389,950</b>	<b>\$1,419,834</b>
<i>Liabilities</i>		
Capital Stock	\$ 50,000	\$ 60,000
Surplus	55,000	10,000
Undivided Profits	14,579	5,118
Deposits	1,241,432	1,320,008
Reserves for Taxes & Other Expenses	5,949	4,278
Acceptances Outstanding (Net)	18,111	17,280
Other Liabilities	4,879	3,150
<b>Total</b>	<b>\$1,389,950</b>	<b>\$1,419,834</b>

**17-5.** The following statements were taken from a financial report of the Marine National Exchange Bank of Milwaukee:

## COMPARATIVE OPERATING EARNINGS

	1951	1950
<b>Interest Earned:</b>		
Loans and Discounts	\$ 860,166	\$ 616,975
Mortgage Loans	469,640	409,715
Securities	909,945	913,238
	<u>2,239,751</u>	<u>1,939,928</u>
<b>Other Operating Income</b>	<u>420,932</u>	<u>427,327</u>
<b>Gross Operating Income</b>	<u>2,660,683</u>	<u>2,367,255</u>
<b>Interest Paid</b>	165,910	158,901
Federal Deposit Insurance Assessment	35,468	81,342
Taxes Other Than On Income	28,966	29,385
Other Operating Expenses	<u>1,381,427</u>	<u>1,305,233</u>
<b>Total Operating Expenses Excluding Income Taxes</b>	<u>1,611,771</u>	<u>1,574,861</u>
<b>Net Operating Income Before Income Taxes</b>	<u>1,048,912</u>	<u>792,394</u>
To Tax Reserve for Bad Debts	187,471	—
Provision for Income Taxes	330,000	175,000
<b>Net Operating Income</b>	<u>531,441</u>	<u>617,394</u>

## RECONCILEMENT OF UNDIVIDED PROFITS

<b>Undivided Profits—December 30, 1950</b>	<b>\$2,488,931</b>
<b>Add:</b>	
Net Operating Income	\$ 531,441
Net Nonrecurring Credits After Taxes	<u>214,651</u>
	<u>746,092</u>
	<b>• \$3,235,023</b>
<b>Deduct:</b>	
Transfer to Surplus	\$1,500,000
Dividends Declared	264,000
To Bond Valuation Reserve from Security Profits	<u>202,581</u>
	<b>1,966,581</b>
<b>Undivided Profits—December 31, 1951</b>	<b>1,268,442</b>

## CAPITAL FUNDS (Per Statement of Condition)

<b>Capital Stock</b>	<b>\$2,200,000</b>
Surplus	5,300,000
Undivided Profits	1,268,442

1. Assuming that the figures presented are fairly representative of banks in general, what is the main source of income to banks? The chief expense

2. Why is the interest income so much greater than the interest expense?

3. Why was the 1951 net income lower than the 1950 net income?

4. State the one outstanding difference between the operating statements of banks and those of merchandising and manufacturing concerns.

5. Is it customary for banks to publish their income and expenses?

6. What was the rate of dividends paid on par value during 1951?

There are some who explain the high rates of dividends possible in the banking business by saying that for each dollar received on deposit the bank can expand its interest-bearing assets about ten dollars. From your study of the figures above would you say that high dividend rates may be accounted for otherwise?

7. Is it unusual for banks to have such a large surplus compared with capital stock as that shown above? Would it be unusual for industrial companies?

8. Why is the Surplus balance a round amount?

9. Study the statement Reconciliation of Undivided Profits.

(a) This corresponds to what statement used by merchandising and manufacturing concerns?

(b) What transactions are probably included in Net Nonrecurring Credits After Taxes?

(c) Explain the nature of the bond valuation reserve amount of \$202,581. Would you expect this reserve to appear in the asset section of the bank's statement of condition?

## Chapter XVIII

**18-1.** Which of the two life insurance companies below shows the better financial position? Give reasons for your conclusion.

Assets	A	B
U. S. Government Bonds . . . . .	\$ 413,990	\$ 241,910
Other Bonds . . . . .	1,373,540	1,329,090
Preferred Stocks . . . . .	46,380	126,350
Mortgage Loans . . . . .	263,570	255,480
Real Estate . . . . .	36,960	162,120
Policy Loans . . . . .	83,460	135,740
Cash . . . . .	31,100	40,670
Other Assets . . . . .	42,220	67,590
Total . . . . .	<u>\$2,291,220</u>	<u>\$2,358,950</u>

<i>Liabilities</i>	<i>A</i>	<i>B</i>
Reserves for Insurance and Annuities . . . . .	\$1,768,510	\$1,924,090
Present Value of Policy Proceeds being Settled under Interest Options . . . . .	300,480	280,340
Dividends Payable . . . . .	52,790	48,780
Policy Claims . . . . .	11,960	12,100*
Other Liabilities . . . . .	8,470	12,540
Contingency Reserves . . . . .	14,700	8,130
Unapportioned Surplus . . . . .	134,310	72,970
Total . . . . .	\$2,291,220	\$2,358,950

**18-2.** The following information was taken from the balance sheets of a life insurance company that does not publish a statement of income:

	<i>December 31</i>	
	<i>Preceding Year</i>	<i>Current Year</i>
Capital and Surplus Funds:		
Capital Stock	\$ 400,000	\$1,000,000
Surplus	1,690,555	1,241,713

The capital stock has a par value of \$10 per share. During the year the company declared and distributed a stock dividend of 150% and paid a cash dividend equivalent to \$0.36 on the new capitalization. Compute the net income per share on the current capitalization.

**18-3.** A life insurance company shows the following items in its published annual statement:

Income (Receipts) during the Year . . . . .	\$23,250,000
Disbursements for the Year . . . . .	18,400,000
Ledger Assets at the Beginning of the Year . . . . .	75,500,000
Nonledger Assets at the End of the Year . . . . .	3,800,000
Nonadmitted Assets at the End of the Year . . . . .	490,000
Total of Liabilities and Paid-Up Capital at the End of the Year . . . . .	78,430,000

What is the total admitted surplus at the end of the year?

**18-4.** A casualty insurance company showed the following items in its annual report:

<i>Interest and Rents</i>	
Received during the Year . . . . .	357,013.11
Due and Accrued December 31 of Previous Year . . . . .	110,304.15
Due and Accrued December 31 of Current Year . . . . .	132,407.64

*Underwriting Expenses*

Paid during the Year .....	\$3,367,237.18
Unpaid December 31 of Previous Year .....	398,607.09
Unpaid December 31 of Current Year .....	537,065.00

Prepare statements showing the interest and rents earned during the year and the underwriting expenses incurred during the year.

**18-5.** The annual report of a life insurance company contained the following statement:

Bonds are carried on the books on what is termed the amortization basis, which produces a fixed rate of income throughout the term of the bond. This involves an adjustment in the book value each year—in some cases an increase, in other cases a decrease. The Company has also made a practice, in compliance with conservative principles, of marking down real estate values by an annual depreciation charge even though the market value may be greater.

- (a) Illustrate with assumed figures the amortization basis of carrying bonds and explain how this method produces a fixed rate of income.
- (b) Do you consider the amortization basis a good method for a life insurance company to follow in valuing its bonds? Give reasons for your answer.
- (c) In your opinion, is the company overly conservative in charging off depreciation on real estate where the market value is greater than the resulting book value?

**18-6.** Comment on the following:

— — — — — INSURANCE COMPANY  
CONDENSED STATEMENT AS OF DECEMBER 31, 19—

*Income*

Total Assets at Close of Previous Year .....	\$117,967.26
Total Income for Year 19— .....	28,994.39
	(Red)

*Disbursements*

Losses & Loss Adjustment Expenses .....	\$ 10,890.76
Management and Directors' Fees .....	6,000.00
Printing, Advertising, Office Expense .....	5,748.19
Car Account and Establishing Agencies .....	1,231.14
Auto Purchase Account .....	1,815.00
Agency Commissions .....	5,563.55
	\$ 31,248.64

Assets	
Reserve for Losses .....	\$ 10,193.83
Reserve for Unearned Premiums .....	9,874.60
Reserve for Security Value Fluctuation .....	8,500.00
Bills Receivable (nonadmitted) .....	15,668.93
Surplus .....	71,475.65
	<hr/>
	\$115,713.01
	(Red) \$146,961.65

(Statement issued by a small insurance company)

## Chapter XIX

**19-1.** (a) A holding company purchased 75% of the stock of a subsidiary company, paying \$130,000.00 for it. The subsidiary had a capital stock of \$100,000.00 and a surplus account of \$40,000.00. At what amount should the minority interest and the good will appear in a consolidated balance sheet to be made immediately after the purchase of the stock?

(b) State the amount of good will and minority interest in a consolidated balance sheet prepared at the end of the year if during the first year after purchase the subsidiary makes a profit of \$10,000.00. Assume that no dividends are distributed by the subsidiary. If only the holding company balance sheet is prepared, at what amount will the investment in the subsidiary be carried?

**19-2.** A parent company acquired 80% of the stock of a subsidiary company at a cost of \$150,000.00. Shortly thereafter the subsidiary distributed a dividend of \$20,000.00. At the end of the year it reported a profit of \$12,000.00. The parent company shows \$18,000.00 income from the subsidiary in its profit and loss statement for the same period. Is the parent company's statement of income correct? Explain.

**19-3.** The *S* company has capital and surplus of \$60,000.00 and \$30,000.00 respectively. All of its stock is purchased by the *H* company for \$80,000.00. Suggest several ways of showing the excess of book value over the purchase price on a consolidated balance sheet.

**19-4.** Company *S* has 3,000 shares of stock outstanding, 2,700 shares being owned by the *H* company. A consolidated statement is prepared at a time when the inventory of company *S* contains goods sold to it by the *H* company at a profit of \$6,000.00. How would you show the inventory on a consolidated balance sheet?

**19-5.** Explain the meaning of the following item listed as an asset by a holding company:

Company's proportion of undistributed surpluses (less deficits) of subsidiary companies from all sources (inclusive of \$1,750,070.18 special sur- plus reserve transferred by one company from replacement reserve) . . . . .	155,561,518.79
Deduct surplus of subsidiary companies at respec- tive dates of acquisition . . . . .	18,938,680.74    136,622,838.05

**19-6.** The *P* Corporation has made substantial advances of cash to *S* Corporation, its wholly owned subsidiary. *S* uses some of the cash to purchase a block of *P* Corporation stock in the open market. *S* also issues some of its own stock, which it sells to *P*, using the cash received to repay the advances received from *P*.

You are to give your opinion of each of the following practices:

- (a) The stock of *P* owned by *S* is shown as an "Investment" on the consolidated balance sheet of *P* and *S*.
- (b) Dividends on the stock of *S* are shown as a nonoperating income on the income statement of *P*.
- (c) The total of dividends declared but not paid on the stock of *P* are shown as a current liability on the consolidated balance sheet of *P* and *S*.

(A. I. A. Exam.)

**19-7.** The Holding Company purchased 90 per cent of the common stock of the Subsidiary Company to which it had previously made a loan of \$100,000. Present a consolidated balance sheet as of the date of acquisition from the following statements prepared as of the same date:

HOLDING COMPANY	
Miscellaneous Assets . . . . .	\$140,000
Investment in Subsidiary Co. . . . .	260,000
Advances to Subsidiary Co. . . . .	100,000
Total assets . . . . .	<u>\$500,000</u>
Liabilities . . . . .	\$150,000
Capital Stock . . . . .	225,000
Surplus . . . . .	125,000
Total Liabilities and Capital . . . . .	<u>\$500,000</u>

## PROBLEMS

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### SUBSIDIARY COMPANY

Total assets . . . . .	<u>\$400,000</u>
Advances from Holding Co. . . . .	\$100,000
Other liabilities . . . . .	50,000
Capital stock . . . . .	150,000
Surplus . . . . .	100,000
Total liabilities and capital	<u><u>\$400,000</u></u>

**19-8.** The following information was taken from the Bell System Consolidated Balance Sheet:

	December 31, 1950
<b>CAPITAL STOCK:</b>	
American Telephone and Telegraph Company:	
Common Stock—Par Value	\$2,861,595,600
Premiums on Capital Stock . . . . .	626,252,091
Capital Stock Installments*	<u>123,821,900</u>
Subsidiaries Consolidated—stocks held by public:	
Common Stock . . . . .	109,829,200
Preferred Stock . . . . .	17,904,300
Total Capital Stock . . . . .	<u><u>\$3,739,403,091</u></u>

**FUNDED DEBT:**

American Telephone and Telegraph Company:	
Convertible Debentures	\$ 444,954,000
Other Debentures	1,440,000,000
Subsidiaries Consolidated	<u>1,748,000,000</u>
Total Funded Debt . . . . .	<u><u>\$3,632,954,000</u></u>

\* Installment payments by employees and interest credited thereon.

List the above items in the order in which they would be paid, assuming complete liquidation of the parent and subsidiary companies. Failure to convey a clear picture of the priority of the various interests has been said to be a shortcoming of the consolidated balance sheet. Do you agree?

**19-9.**

**STATEMENT OF CONSOLIDATED UNAPPROPRIATED EARNED  
SURPLUS APPLICABLE TO AMERICAN TELEPHONE AND  
TELEGRAPH COMPANY STOCK—YEAR 1950**

BALANCE—DECEMBER 31, 1949	<u><u>\$340,087,915</u></u>
Net Income Applicable to A. T. & T. Co. Stock . . . . .	<u><u>\$346,962,051</u></u>
Transferred from Earned Surplus Reserved—Net . . . . .	532,775
Profit on Sales of Securities . . . . .	3,377,972
Adjustment of Tax Accruals for Prior Years . . . . .	2,792,576

Miscellaneous Additions	\$ 791,681
TOTAL ADDITIONS .....	<u>\$354,457,055</u>
Dividends on A. T. & T. Co. Stock .....	<u>\$248,270,460</u>
Amortization of Telephone Plant Acquisition Adjustment .....	707,812
Organization and Capital Stock Expense Charged Off .....	1,603,095
Net Loss on Sales of Property and Abandoned Projects .....	707,408
Miscellaneous Deductions .....	105,729
TOTAL DEDUCTIONS .....	<u>\$251,394,504</u>
BALANCE—DECEMBER 31, 1950 .....	<u>\$443,150,466</u>

1. Why does the title of the statement contain the words "Applicable to American Telephone and Telegraph Company Stock"?
2. Are gains and losses on disposal of securities and other assets normally shown in surplus statements?
3. Describe the "Amortization of Telephone Plant Acquisition Adjustment" item.
4. Would good accounting practice require that "Organization and Capital Stock Expense" be charged off? Explain.
5. Contrast the form above with the following taken from the balance sheet of the American Telephone and Telegraph Company:

	December 31 1950
UNAPPROPRIATED EARNED SURPLUS	<u>\$260,898.1</u>
 Analysis of change during 1950:	
Net Income .....	\$286,802,293
Miscellaneous Additions .....	<u>493,950</u>
Total Additions .....	<u>\$787,296,252</u>
Dividends Declared .....	\$248,270,460
Miscellaneous Deductions .....	944,115
Total Deductions .....	<u>\$249,214,575</u>
Net Increase .....	<u>\$ 38,081,677</u>

## P9-10

## UNITED STATES FOIL COMPANY

## BALANCE SHEET

December 31, 1950

## Assets

CASH .....	\$ 118,786
 RECEIVABLES:	
Dividend (\$8,786), and Accounts (\$8,803) Receivable from Subsidiaries; and Sundry .....	

**INVESTMENTS:****In Subsidiaries:**

Reynolds Metals Company—Common Stock—at cost (quoted market price \$30,073,120)	\$3,568,930
Eskimo Pie Corporation:	
Capital Stock—at written-down amount (quoted market price \$843,869)	\$1,028,010
Notes Receivable: mortgage (first—6% —past due) \$70,000; unsecured (5%) \$100,000	170,000
	1,198,010

**Other:**

Capital Stocks, at Cost, after Deducting Interest Received from Stock Equity (market quotations not available)—\$943,469; note receivable (5% —unsecured)—\$14,000	957,469
<b>TOTAL INVESTMENTS IN SUBSIDIARIES</b>	<b>\$5,724,409</b>

In Common Stock of Robertshaw-Fulton Controls Company (affiliated company)—at cost (quoted market price \$82,500)

42,778

In Capital Stocks of Other Companies, Not Affiliated  
—at Cost (quoted market price \$308,288)

484,869

\$6,252,056

Less Allowance

700,000

5,552,056

\$5,689,069

**Liabilities**

ACCOUNTS PAYABLE AND ACCRUED EXPENSES	8,057
FEDERAL AND STATE TAXES ON INCOME (estimated)	53,328
DIVIDEND ON PREFERRED STOCK (payable January 1, 1951)	11,849

**CAPITAL STOCK AND SURPLUS:****Capital Stock:**

Preferred 7% Cumulative, \$100 par value (liquidation value \$100 per share; redemption value \$110 per share; plus, in each case, accrued dividends): Authorized 15,000 shares; issued and outstanding 6,771 shares, after deducting 3,729 shares in treasury	\$ 677,100
--	------------

**Common, Class A, \$1 par value:**

    Authorized, issued, and outstanding 60,000 shares

60,000

**Common, Class B, non-voting, \$1 par value.**

    Authorized 600,000 shares; issued and outstanding 598,092 shares, after deducting 1,900 shares in treasury

598,092

**TOTAL CAPITAL STOCK**

\$1,335,192

Capital Surplus (no change during 1950)

1,069,191

Earned Surplus

3,211,452

5,615,835

\$5,689,069

Notes have been omitted.

1. Compute the liquidating value per share of the common stock based on the following assumptions:
  - (a) That quoted market prices reflect present realizable values.
  - (b) That Class A and Class B stock are the same except for voting rights.
2. The market value of U. S. Foil B stock on December 31, 1950, was approximately \$29.00. Compute the per cent of discount from liquidating value and give a possible explanation for such a discount.
3. Explain what changes would take place in the statement if a consolidated balance sheet were prepared.
4. How would you account for, in this case, the distinction between "subsidiaries" and the "affiliated company"?
5. Would you expect the income statement of the company to show dividends only from subsidiaries or its share of their net earnings?

## Miscellaneous Problems

**M-1.** A certain joint-stock land bank, in one year, sold lands for \$1,090,901, which were carried on its books at \$1,828,658. The book figures represented original loans plus costs of foreclosure. During the same year it bought and retired \$2,381,000 in face value of its own bonds. Assuming that the bonds were purchased at an average price of 50 per cent of par, did the bank better its financial position by these transactions?

**M-2.** The statements and questions presented below all pertain to savings and loan associations.

(a) The following condensed report was presented by an association. Comment on the form and content.

### THE SAFEWAY SAVINGS & LOAN ASSOCIATION

#### PROFIT AND LOSS ACCOUNT

December 31, 19—

##### *Expenses*

Interest Paid	\$ 32 50
Dividends Paid	2 418 73
Cash Over and Short	329 00
Other Expenses	1 927 81
Advertising	180 00
Repairs	322 84
Legal Reserve	400 00
Undivided Profits	, 130 00
	<u>\$5,840 88</u>

##### *Receipts*

Interest	\$3 260 42
Rents	1,760 20
Fines	73 06
Profit on Sale of Real Estate	417 90
Cash Over and Short,	<u>329 30</u>
	<u>\$5,840 88</u>

(b) Explain the following statement:

It is in the order of listing of Liabilities and Ownership Equity that the Standard Form Reports differ materially from the "common rule" order of listing. A review of the items as listed in the (Statement of Condition)

discloses that those items representing "Ownership Equity," namely Shareholders' (Capital) Accounts and Reserve (earmarked net ownership) Accounts have been widely separated and the direct Liability accounts interposed.

- (c) Why does the Statement of Condition always balance?
- (d) What is the Statement of Undivided Profits, and what is its purpose?
- (e) For what main purposes are financial statements prepared by savings and loan associations?
- (f) What suggestions have you for making financial statements of savings and loan associations more readily understood by the layman?
- (g) A savings and loan association showed the following item in its statement of condition, RESERVE FOR INCOME COLLECTED IN ADVANCE, together with an explanatory note that "This is a reserve account which substantially strengthens the Association." How does this account strengthen the association?
- (h) Which is ordinarily a good sign: a high or low percentage of reserve for uncollected interest to mortgage loans? Explain the reason for your answer.

**M-3.** Comment on the following statements taken from the sources indicated:

- (a) "To say: The company made \$10,000,000 but had to spend \$8,000,000 of it for taxes, is much better than: We were soaked \$8,000,000 for taxes but managed to hang on to \$2,000,000 anyhow."

"The balance sheet has to come in, of course, and the operating statement with it. But make sure that auditors' explanations are brief and understandable, or relegate them to a separate page which the readers can easily skip."

- "Give enough figures. No stockholder on earth can tell anything about a company unless he has an analysis of reserves."

• "Companies: Pep Up Your Annual Reports!" *Forbes*.

- (b) "Why did the —— company, in which I hold common stock, cut off the dividend? Its latest report shows a large surplus, so why doesn't it give some of that money to its stockholders now, when they need it most?" *The Chicago Tribune*.

(c) "The stockholders are not entitled to a division of the profits until all the debts have been paid." 94 Kan. 370, 146 Pac. 1014.

- (d) "Nor can an insolvent corporation lawfully declare and dis-

tribute a dividend since it cannot have any surplus or net earnings as long as it is unable to pay its debts." 11 Ga. 440.

(e) "Money earned as interest, however well secured, or certain to be eventually paid, cannot in fact be distributed as dividends to stockholders, and does not constitute surplus profits." 72 Cal. 199 \* 13 Pac. 498.

(f) "Despite the wave of strikes most companies manage to make money—if not through operations then by bookkeeping." A daily newspaper.

(g) "The Peoples Gas Light & Coke Co., which serves Chicago, last night announced a Thanksgiving present to its stockholders of a value of nearly \$3,500,000. As usual, the present is in the form of rights to subscribe to new stock." The Chicago Tribune.

**M-4.** The following were taken from the annual report of The Borden Company:

1. From the balance sheet:

Inventories:	1950	1949
Finished Goods .....	\$32,011,545	\$34,132,197
Materials and Supplies .....	28,364,261	20,326,250
Total (certain products at Income Tax Lifo basis adopted as of January 1, 1950)	\$60,375,806	\$54,458,447
Less excess as of January 1, 1950 of Tax Lifo basis over book Lifo basis previously adopted .....	5,469,633	5,469,633
	\$54,906,173	\$48,988,814

2. As notes to the financial statements:

(a) The Company was guarantor of bank loans to foreign affiliated companies in amounts aggregating approximately \$1,600,000 at December 31, 1950.

(b) Federal income tax returns for the Company have been examined and cleared for the years up to and including 1943. Returns for years subsequent to 1943 have not yet been examined by the Bureau of Internal Revenue.

3. As a separate statement "to show how Borden's handled its money in 1950."

Paid to Farmers .....	\$308 millions
Paid to Employees .....	113 "
*Other Costs, Expenses .....	190 "
Paid to Stockholders .....	12 "
Put Back in the Business .....	8 "
Received from Customers .....	631 "

\* Including taxes of more than \$24 millions.

1. Explain how the change in inventory basis caused the reduction in inventory values.
2. (a) What is the purpose of this note?  
(b) Why is this data usually significant?
3. (a) How do you account for the fact that farmers were paid over 25 times the amount paid to stockholders?  
(b) Can you tell from the statement whether or not the stockholders received a fair return?  
(c) What per cent of net income was retained in the business?

**M-5.** Two methods of showing the proprietorship of a certain corporation were presented in the *Certified Public Accountant*. Discuss the differences in these two methods and explain why you prefer one above the other. How was the contingent profit of \$18,989.12 shown in the second method calculated?

#### CAPITAL AND SURPLUS

December 31, 19—

(1) Capital Stock and Surplus:

Preferred Stock (7% cumulative, callable, etc.)	
Authorized and Issued 750 Shares of \$100.00 Each	..... \$ 75,000.00

Common Stock:

Authorized and Issued 50,000 Shares of No Par Value	..... 133,391.20
Earned Surplus (Exhibit X)	..... \$112,812.86
<b>Deduct—Cost of Treasury Stock Purchased</b>	
150 Shares of Preferred Stock	..... \$8,250.00
5,000 Shares of Common Stock	..... 1,100.00
	..... 9,350.00
	..... <b>103,462.86</b>
	..... <b>\$311,854.06</b>

(2) Capital Stock and Surplus:

Preferred Stock (7% cumulative, callable, etc.):	
Authorized	..... 75,000.00
In Treasury	..... 15,000.00
Outstanding	..... \$ 60,000.00

Common Stock (no par, etc.):

Authorized	..... 50,000 Shares
In Treasury	..... 5,000 Shares
Outstanding	..... 45,000 Shares
	..... 120,052.08

Surplus:

Contingent Profit on Treasury Stock Purchased	..... \$ 18,989.12
Earned Surplus (Exhibit X)	..... 112,812.86
	..... <b>131,801.98</b>
	..... <b>\$311,854.06</b>

**M-6.** The American Metal Products Company included the following figures in its annual report:

**COMPARATIVE HIGHLIGHTS**

	1950	1949
Net Sales	\$30,756,658	\$20,187,900
Net Profit	2,969,942	3,031,273
Earned Surplus at December 31	8,642,360	7,306,266
Expenditures for Plant and Equipment	1,367,852	336,070
Total Property, Plant, and Equipment	4,509,771	3,502,181
Inventories	1,709,232	927,310
Number of Employees	2,386	1,415
Number of Shareholders	4,875	1,005
Working Capital per Share at December 31	5.60	5.20
Net Worth	10,362,200	9,026,105
Net Worth per Share	12.05	10.50
Earnings per Share	3.45	3.53
Dividends Paid	1,633,848	1,074,900
Dividends Paid per Share	1.90	1.25

**FACTS IN BRIEF—1950**

Received from Customers (Net Sales) and Miscellaneous Income	\$30,816,805
Paid for Materials, Supplies, and Outside Services	16,063,696
Added by Manufacturing Efforts	<u>\$14,753,109</u>

The Added Amount Was Distributed as  
Follows:

Salaries and Wages	\$8,486,368	57.53%
Taxes	3,000,637	20.34
Dividends	1,633,848	11.07
Set Aside for Wear and Tear and Future Growth	1,632,256	11.06
		<u>\$14,753,109</u> <u>100.00%</u>

- What is the value of such highlights and facts?
- What might account for the decreased net profits for 1950 in view of the substantial expansion of sales?
- Prepare a statement of earned surplus for the year 1950.
- Assuming that there were disposals of plant property and equipment during the year that had a book value of \$64,100, what was the depreciation for 1950?
- Is it logical that inventories should increase in 1950?
- Do you consider the increase in number of shareholders unusual?
- Working capital per share increased during 1950. Does this mean that the working capital ratio increased?

8. Assuming that there is no surplus other than earned surplus:  
 (a) What is the capital stock of the company?  
 (b) Did the new stockholders acquire their shares from the company or from former stockholders?  
 (c) What is the par value per share?

9. What is included in the last item described as "Set aside for wear and tear and future growth"?

10. What is the effect of using \$14,753,109 as 100% instead of net sales in Facts in Brief?

**M-7.** From the information submitted hereafter, prepare a corrected balance sheet of The Acme Trading Company as at December 31, 19—. All year dates omitted are for the year ended with the balance sheet date.

### THE ACME TRADING COMPANY

#### Balance Sheet, December 31, 19— per Books

Current Assets:	<i>Assets</i>		
Cash in Banks	\$151,200		
Accounts and Notes Receivable	\$105,000		
Less—Reserve for Bad Debts	2,400	102,600	
Inventories		182,000	
Total Current Assets		<u>\$435,800</u>	
Property:			
Land	\$ 35,000		
Buildings	\$ 70,000		
Less—Reserve for Depreciation	16,300	53,700	
Machinery and Equipment	\$130,000		
Less—Reserve for Depreciation	39,000	91,000	
Total Property		<u>\$179,700</u>	
Investment in Subsidiary Company—The Smith Company		\$30,000	
Redemption Fund for Serial Bonds		14,000	
Unamortized Discount on Serial Bonds Payable		4,960	
		<u>\$64,450</u>	
Liabilities			
Current Liabilities:			
Notes Payable—Trade		\$ 10,000	
Notes Payable—Banks		10,500	
Accounts Payable—Trade		130,600	
Accrued Liabilities		5,800	
Estimated Federal Income Taxes Payable		12,000	
Serial Bonds Payable, 4½%, Series A, Due January 2, Following		10,000	
Interest on Notes Receivable—Collected in Advance		350	
Total Current Liabilities		<u>\$179,250</u>	

Total Current Liabilities (brought forward) .....	\$179,250
Fixed Liabilities:	
Serial Bonds Payable 4½%, Series B to J .....	90,000
Deferred Credits to Income:	
Customers' Advance Payments for Merchandise Deliveries to Be Made .....	12,000
Capital:	
Capital Stock—Common: Authorized 1,000 Shares, Issued, Outstanding and in Treasury 500 Shares	\$ 50,000
Preferred: Authorized \$100,000, Issued and Outstanding 600 Shares	60,000
Total .....	\$110,000
Capital Surplus .....	106,500
Earned Surplus:	
Balance, January 1, 19— .....	\$150,200
Add—Net Income for Year Ended December 31, 19— .....	25,500
	\$175,700
Deduct—Purchase Cost of Treasury Stock	9,000
	166,700
	383,200
	\$664,450

Additional data, determined in examination of the accounts:

1. Cash in banks includes \$15,000 in a special bank account, segregated to meet estimated cost of a building extension for which the contract was let early in the year following.
2. Accounts and notes receivable includes an amount owing from an officer, \$4,000, payable on demand, and has been reduced by \$1,250 owed by the company to various employees.
3. The inventories include advance payments of \$6,000, made by the company to its suppliers for merchandise to be manufactured and delivered March 1 following.

Merchandise purchased for \$5,000 in December, 19—, and remaining unsold as at December 31, 19— was financed through notes payable to banks, collateralized by trust receipts.

The basis of inventory valuation is cost or market whichever is lower.

4. The property accounts, with the exception of land, are stated at cost less accumulated depreciation. In accordance with a note of the directors, the book amount of land was increased \$10,000 over cost on the basis of an appraisal by the X Engineering Company as of July 1, 19—. This increase was booked as a debit to land account and a credit to capital surplus.

5. The investment in The Smith Company represents the purchase price of 80% of the outstanding stock of The Smith Company. The acquisition was made on January 2, 19—, at a cost of \$30,000 or \$2,000 more than the underlying book value of the subsidiary's net assets as of that date. During the year The Acme Trading Company credited to income account \$4,000 dividends paid by The Smith Company from its earned surplus. The net earnings of The Smith Company for the year 19— were \$2,000.

6. The redemption fund for serial bonds represented cash which had been turned over to the trustee for redemption of these bonds as they matured.

7. The book amount of unamortized discount on serial bonds payable represents 90% of a total discount of \$5,500 involved in the issue, as of January 2, 19—, of \$100,000 serial bonds, maturing at one-year intervals, in equal amounts of \$10,000, beginning January 2 following.

8. The preferred stock (par value \$100 per share) is 5% cumulative and has a liquidation preference of \$110 per share; undeclared dividends accumulated to December 31, 19—, equal \$5 per share. Common stock (without par value) was issued for cash at \$200 per share, of which the directors voted to carry one half to capital surplus.

9. The capital surplus account has been charged \$3,500, representing the amount of a fire loss on buildings, to the extent not compensated for by insurance, sustained October 15, 19—.

•10. The earned surplus account has been charged for the purchase of treasury common stock at \$9,000, or \$1,000 less than the original issue price. Such stock is canceled by the Board of Directors, with the approval of stockholders, in January of the following year.

11. The balance sheet fails to reflect these two facts:

(a) An accommodation indorsement by The Acme Trading Co. on a 6%, \$10,000 demand note of The Smith Company, outstanding as at December 31, 19—.

(b) An acceptance by The Acme Trading Co. of a \$1,000, 30-day time draft, dated December 15, 19—, drawn on the company by a trade creditor in favor of the latter.

NOTE: Ignore the effect of any income adjustments on the tax liability for the year.

(Adapted from A. I. A. Exam.)

**M-8.** A golf club constructed a club house at a cost of \$100,000. It was financed by a \$100,000 bond issue, the funds being furnished by various members. The bonds are due in 50 years and are to be called by lot at the rate of \$2,000 a year. A 2% depreciation rate is considered to be proper. You are asked by the directors of the club to advise them as to whether the provision for the \$2,000 annual reduction of the bond issue, the annual depreciation of \$2,000, or both, should be included in the budget to be covered by club dues and green fees. Explain the effect of the various alternatives.

(A I A. Exam.)

**M-9.** The following preliminary report is presented as an example of a brokerage house "circular":

THE MILWAUKEE COMPANY

(Investment Securities)

200,000 SHARES

HAMILTON MANUFACTURING COMPANY

COMMON STOCK (\$5 PAR VALUE)

OFFERING: December 3, 1951.

PURPOSE: Proceeds will be added to the Company's general funds and will be required in the expansion of the manufacture of its major products.

THE COMPANY AND OPERATIONS

Hamilton Manufacturing Company has been a Wisconsin corporation since its organization on February 25, 1926, as the successor to "The Hamilton Manufacturing Co.", also a Wisconsin corporation, organized in 1889. The Company's principal office and plant are located at Two Rivers, Wisconsin.

The Company's earlier established products still in major production and now accounting for approximately 55% of total dollar sales, consist of wood and steel professional furniture and equipment, including wood type and printing plant equipment; dental instrument and laboratory cabinets; medical and surgical furniture; engineering and drafting room tables and filing units; research laboratory and hospital equipment; and contract manufacturing of kitchen cabinets and various other cabinet products.

The Company pioneered in the development and manufacture of automatic tumbler type domestic clothes dryers in both gas and electric models. The first unit of this type was placed on the market in 1939 after several years of research. This line has proved an eminently successful addition to the Company's products and has enabled it to reach new and broader markets. Since cessation of hostilities of World War II this phase of the Company's business has expanded materially and now accounts for approxi-

## PROBLEMS

mately 40% of its combined dollar sales in all lines. Sixty leading distributors in the home appliance field, supplying several thousand dealers, are now franchised to handle distribution and sale of the dryer. Negotiations are now in progress with a large and responsible Eastern manufacturing firm for supplemental production of Hamilton automatic clothes dryers, primarily to supply the Eastern and Far Western markets. This arrangement, if consummated, together with the increased production which may be secured from existing facilities at Two Rivers, will provide the Company with a potential supply of dryers several times larger than the present output.

In connection with the current defense program, the Company has also accepted and has partially filled orders from various branches of the Armed Services. These orders, for regular products of the Company, have aggregated about two million dollars.

## CAPITALIZATION—OCTOBER 6, 1951

## \* Reflects New Financing

Common Stock (1,000,000 Shares—\$5 Par) . . . . .	\$ 5,000,000
Surplus (1) . . . . .	<u>7,227,422</u>
Total Capitalization . . . . .	<u>\$12,227,422</u>

(1) Includes a premium of \$1,400,000 after assuming \$12 as sale price of new common.

## BALANCE SHEET SUMMARY

## October 6, 1951

Fixed Assets . . . . .	\$5,272,146
Less: Reserve for Depreciation . . . . .	<u>2,198,249</u>
Net Fixed Assets . . . . .	<u>\$3,073,897</u>
Current Assets . . . . .	\$9,074,303
Less: Current Liabilities . . . . .	<u>2,430,911</u>
Net Working Capital . . . . .	<u>\$6,643,392</u>

## SUMMARY OF EARNINGS

(000 omitted)

Years to Dec. 31	Net Sales	Income B.I.T. (c)	Net Income	Per Common Share (a) Earnings	Dividends	Price Range
1946	\$ 7,939	\$ 1,640	\$ 929	\$0.97 1/4	\$0.37 1/2	—
1947	10,575	2,365	1,315	1.67	0.62 1/2	8 1/2 - 7 1/2
1948	15,374	3,270	1,870	2.33	0.67 1/2	8 1/2 - 7 1/2
1949	14,666	3,073	1,764	2.20	0.75	8 1/2 - 6 1/2
1950	17,243	3,657	1,847	2.59	0.75	12 - 8 1/2
Jan. 1 to 10/6/51	18,449	3,335	1,110	1.39	(13 - 10 1/2)	(b)

(a) Based on the 800,000 shares presently outstanding.

(b) Range to date.

(c) Before income taxes.

## DIVIDENDS ON COMMON

The Company has been paying a quarterly dividend of \$0.20 which was increased from \$0.17½ in September, 1950. Dividends are paid on the last day of March, June, September, and December to stockholders of record, around the 20th of the month.

This information is derived from a preliminary prospectus and the registration statement relating to a new issue of securities. The registration statement has not yet become effective, and this information is given circulation solely for informative purposes and is not under any circumstances to be considered a prospectus, an offer to sell, or a solicitation of an offer to buy the securities referred to. No offer to sell is or will be made, and no offer to buy is or will be solicited or accepted, until the registration statement becomes effective.

1. The registration statement showed the following items not included in the Balance Sheet Summary above:

Other Assets . . . . .	\$235,133
Reserve for Workmen's Compensation Insurance . . . . .	125,000

Present a statement showing whether or not the Balance Sheet Summary reflects the new financing.

2. What will be the book value per share after the new financing?
3. What would be the rate of earnings on the proposed sale price if the earnings average \$1.50 per share?
4. What will be the yield to an investor if the current dividend per share is maintained?
5. Does the offering appear attractive based on the preliminary information furnished? Give reasons for your conclusion.
6. Suggest additional information which would be desirable for a prospective investor to have.

#### M-10. Price level changes and financial statements.

Summarized below are the conclusions of the Committee on Concepts and Standards of the American Accounting Association (statement issued 8/1/51):

1. In periodic reports to stockholders, the primary financial statements, prepared by management and verified by an independent accountant, should, at the present stage of accounting development, continue to reflect historical dollar costs.
2. There is reason for believing that knowledge of the effects of the changing value of the dollar upon financial position and operating results may be useful information, if a practical and substantially uniform method of measurement and disclosure can be developed.
3. The accounting effects of the changing value of the dollar should be

made the subject of intensive research and experimentation; the specific significance of the basic problem should be determined with as much accuracy as possible; the means of its solution, if its significance warrants, should be thoroughly investigated.

4. The effects of price fluctuations upon financial reports should be measured in terms of the over-all purchasing power of the dollar—that is, changes in the general price level as measured by a *general* price index. For this purpose, adjustments should not be based on either the current value or the replacement costs of specific types of capital consumed.

5. The measurement of price level changes should be all-inclusive; all statement items affected should be adjusted in a consistent manner.

6. Management may properly include in periodic reports to stockholders comprehensive supplementary statements which present the effects of the fluctuation in the value of the dollar upon net income and upon financial position.

(a) Such supplementary statements should be internally consistent; the income statement and the balance sheet should both be adjusted by the same procedures, so that the figures in such complementary statements are co-ordinate and have the same relative significance.

(b) Such supplementary statements should be reconciled in detail with the primary statements reflecting unadjusted original dollar costs, and should be regarded as an extension or elaboration of the primary statements rather than as a departure therefrom.

(c) Such supplementary statements should be accompanied by comments and explanations clearly setting forth the implications, uses, and limitations of the adjusted data.

—*The Journal of Accountancy*, January, 1952, p. 54

Summarize briefly in your own words the essential idea set forth in each conclusion above. Discussions of these conclusions may be found in accounting magazines.

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